12th European and Global CLINAM-Summit

Conference and Exhibition

Clinical Nanomedicine and the Impact of Digitalization and Artificial Intelligence for Precision Medicine
The Technologies for Diagnosis and & Therapy in Patient Centric Medicine

SUBMISSION of Applications ENDS February 2, 2020

PROGRAMME 2020 (Status January 2020)
Summit under the Auspices of the Swiss Confederation with 36 NPO Programme Supporters

Congress Center Basel
Messeplatz 21
CH-4058 Basel, Switzerland
Phone +41 58 206 28 28
info@congress.ch

Viva Management GmbH
Kramgasse 16
CH-3011 Bern, Switzerland
Phone +41 31 311 74 34
clinam@viva-management.ch

European Foundation for Clinical Nanomedicine
Alemannengasse 12
CH-4058 Basel, Switzerland
Phone +41 61 695 93 95
clinam@clinam.org
<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00</td>
<td>Hall Osaka</td>
<td>Sunday Events in Halls Osaka and Samarkand (second-floor)</td>
</tr>
<tr>
<td>14:30</td>
<td>Hall Montreal</td>
<td>Sunday Lecture for young researchers and Students: &quot;Small Sizes for the Small – Nanomedicine Challenges and Opportunities in Pediatric Cancer, Prof. A. Sosnik, Technion, Haifa (IL)</td>
</tr>
<tr>
<td>19:45</td>
<td>Hall Helvetia</td>
<td>First Meeting for all Speakers: Dinner at the Swissôtel Le Plaza***** on the 1st Floor, Hall Helvetia</td>
</tr>
<tr>
<td>21:00</td>
<td>Hall Sydney</td>
<td>General Assembly of the International Society for Nanomedicine</td>
</tr>
<tr>
<td>25:00</td>
<td>Hall Rio</td>
<td>4. Topic and Speaker to be announced</td>
</tr>
<tr>
<td>27:00</td>
<td>Hall Sydney</td>
<td>Leaving for Evening Event (Precise time – Do not miss the ride)</td>
</tr>
<tr>
<td>30:00</td>
<td>Hall Sydney</td>
<td>3. Opening Address</td>
</tr>
<tr>
<td>34:00</td>
<td>Hall Sydney</td>
<td>First Meeting for all Speakers: Dinner at the Swissôtel Le Plaza***** on the 1st Floor, Hall Helvetia</td>
</tr>
<tr>
<td>36:00</td>
<td>Hall Sydney</td>
<td>2. Opening Address from the Canton of Basel-Stadt  Dr. Lukas Engelberger, Member of the Executive Council of the Canton of Basel-Stadt, Basel</td>
</tr>
<tr>
<td>38:00</td>
<td>Hall Sydney</td>
<td>1. Opening Address from the Swiss Government Dr. Gregor Haefliger, Head of the Research and Innovation division, (SERI), Bern(CH)</td>
</tr>
<tr>
<td>08:30</td>
<td>Hall Osaka</td>
<td>Opening Address from CLINAM, Prof. med. Stefan Schulz</td>
</tr>
<tr>
<td>08:36</td>
<td>Hall Osaka</td>
<td>Scientific Introduction of the Summit 11 / 2020</td>
</tr>
<tr>
<td>09:00</td>
<td>Hall Montreal</td>
<td>Open Lecture</td>
</tr>
<tr>
<td>09:15</td>
<td>Hall Montreal</td>
<td>Nucleic Acids: Present置身于未来, Dr. L. Pfeiffer, Department of Pathology, Medical University of Vienna (Austria)</td>
</tr>
<tr>
<td>10:00</td>
<td>Hall Osaka</td>
<td>Break</td>
</tr>
<tr>
<td>10:30</td>
<td>Hall Osaka</td>
<td>3. Topic and Speaker to be announced</td>
</tr>
<tr>
<td>11:15</td>
<td>Hall Osaka</td>
<td>2. Topic and Speaker to be announced</td>
</tr>
<tr>
<td>12:00</td>
<td>Hall Osaka</td>
<td>Lunch</td>
</tr>
<tr>
<td>12:15</td>
<td>Hall Osaka</td>
<td>5. New Therapeutic Modalities and their Impact on Unmet Medical Needs</td>
</tr>
<tr>
<td>13:15</td>
<td>Hall Osaka</td>
<td>6. Chemistry of New Nanomedicines</td>
</tr>
<tr>
<td>14:15</td>
<td>Hall Osaka</td>
<td>7. How do Nanoparticles Behave - Nano Interacting with Life</td>
</tr>
<tr>
<td>15:15</td>
<td>Hall Osaka</td>
<td>8. Beingness Smart Materials Boosting NM</td>
</tr>
<tr>
<td>16:15</td>
<td>Hall Osaka</td>
<td>9. Preclinical Trials</td>
</tr>
<tr>
<td>16:45</td>
<td>Hall Osaka</td>
<td>10. Small Speeches on Submitted Posters and on University Village Posters 2020</td>
</tr>
<tr>
<td>16:45</td>
<td>Hall Osaka</td>
<td>11. Satellite 1: 11.15 – 16.15 Global Substance Registration System (G-SRS)</td>
</tr>
<tr>
<td>16:45</td>
<td>Hall Osaka</td>
<td>12. Late Breaking and Ongoing Trials in Nanomedicine and Targeted Delivery</td>
</tr>
<tr>
<td>19:00</td>
<td>Hall Osaka</td>
<td>End of Day 1</td>
</tr>
<tr>
<td>19:45</td>
<td>Hall Osaka</td>
<td>Leaving for Evening Event (Precise time – Do not miss the ride)</td>
</tr>
<tr>
<td>20:00</td>
<td>Hall Osaka</td>
<td>Apéritif in the Garden on behalf of the Canton of Basel-Stadt</td>
</tr>
<tr>
<td>20:30</td>
<td>Hall Osaka</td>
<td>Preparatory Meeting for the Teams of ESNAM, ISNM, PRNANO</td>
</tr>
<tr>
<td>08:15</td>
<td>Hall Osaka</td>
<td>NOD Funding in USA for Nanotechnology in Cancer Dr. Florio Godinello, Director, NCI Alliance for Nanotechnology in Cancer</td>
</tr>
<tr>
<td>09:00</td>
<td>Hall Osaka</td>
<td>14. Nanomedicine - Visions for 2020-2030 Based on lessons learned from past experience (Barenholz / Gabizon / Jensen / Dobrovolskaia)</td>
</tr>
<tr>
<td>10:10</td>
<td>Hall Osaka</td>
<td>Break</td>
</tr>
<tr>
<td>10:40</td>
<td>Hall Osaka</td>
<td>15. Integrated Assessment of Pharmacokinetics for Nanomedicine Development</td>
</tr>
<tr>
<td>11:15</td>
<td>Hall Osaka</td>
<td>16. Nanomedicine in Brain Injuries and Neurological Disorders</td>
</tr>
<tr>
<td>11:40</td>
<td>Hall Osaka</td>
<td>17. Advances in the Field of Non-Biological Complex Drug Products (NBCDs) and their Follow-on Versions</td>
</tr>
<tr>
<td>12:15</td>
<td>Hall Osaka</td>
<td>18. Advanced Cell-based Assays and Biosensors for Assessment of Nanomedicine Performance and Realistic Prediction of In Vivo Responses</td>
</tr>
<tr>
<td>15:45</td>
<td>Hall Osaka</td>
<td>19. Second Session of Small Speeches on Submitted Posters and on University Village Posters 2020</td>
</tr>
<tr>
<td>16:15</td>
<td>Hall Osaka</td>
<td>20. Regulatory Authorities Internal Session (RAPP) (Separate Programme to invited Members)</td>
</tr>
<tr>
<td>16:45</td>
<td>Hall Osaka</td>
<td>21. Pharmaceutical Development and Manufacturing (APV session)</td>
</tr>
<tr>
<td>17:45</td>
<td>Hall Osaka</td>
<td>23. Planform for Targeting, Drug Delivery, Diagnostics, Drug Development Design Strategies</td>
</tr>
<tr>
<td>18:15</td>
<td>Hall Osaka</td>
<td>24. Clinical Molecular and Nuclear Imaging in Nanomedicine and Precision Medicine</td>
</tr>
<tr>
<td>18:45</td>
<td>Hall Osaka</td>
<td>25. Prevention, Safety and Risk Management N-drugs</td>
</tr>
<tr>
<td>19:15</td>
<td>Hall Osaka</td>
<td>26. Antimicrobial Resistance (Prof. Oehy Barenhold)</td>
</tr>
<tr>
<td>19:45</td>
<td>Hall Osaka</td>
<td>27. The Scope of Artificial Intelligence in the Medical Field (Prof. Dr. Stefan Schulz)</td>
</tr>
<tr>
<td>20:15</td>
<td>Hall Osaka</td>
<td>28. Poster Sessions Viewing and Individual Discussions and Explanations</td>
</tr>
<tr>
<td>20:45</td>
<td>Hall Osaka</td>
<td>29. Dinner on the Terrace ofMerian Spitz</td>
</tr>
<tr>
<td>21:15</td>
<td>Hall Osaka</td>
<td>30. Nanoparticles and the Immune System</td>
</tr>
<tr>
<td>21:45</td>
<td>Hall Osaka</td>
<td>31. Nanotechnology in Cancer</td>
</tr>
<tr>
<td>22:15</td>
<td>Hall Osaka</td>
<td>32. Extracellular Vesicles in Nanomedicine – Dosimeters</td>
</tr>
<tr>
<td>22:45</td>
<td>Hall Osaka</td>
<td>33. Nanomedicine in rare against Infection and Inflammation</td>
</tr>
<tr>
<td>23:15</td>
<td>Hall Osaka</td>
<td>34. NM in Rare and Neglected Diseases</td>
</tr>
<tr>
<td>23:45</td>
<td>Hall Osaka</td>
<td>35. Nanomedicine Characterization – Global State of the Art</td>
</tr>
<tr>
<td>08:30</td>
<td>Hall Osaka</td>
<td>36. Satellite 2: UNESCO Session - Ethics, Capacity Building, Medical Nanomaterials and Regulatory Matters</td>
</tr>
<tr>
<td>11:10</td>
<td>Hall Osaka</td>
<td>37. Nanoparticles and the Immune System</td>
</tr>
<tr>
<td>11:40</td>
<td>Hall Osaka</td>
<td>38. Atherosclerosis Nanomedicine</td>
</tr>
<tr>
<td>12:10</td>
<td>Hall Osaka</td>
<td>39. Nano-Physics in Healthcare</td>
</tr>
<tr>
<td>12:40</td>
<td>Hall Osaka</td>
<td>40. Conceiving Networking, Publishing and Regulatory Matters in Nanomedicine</td>
</tr>
<tr>
<td>13:10</td>
<td>Hall Osaka</td>
<td>41. Satellite 3: How is the Swiss Personalized Health Network (SPHN) making health data findable, Accessible and Interoperable?</td>
</tr>
<tr>
<td>13:40</td>
<td>Hall Osaka</td>
<td>42. Results of the 12th CLINAM summit</td>
</tr>
<tr>
<td>14:10</td>
<td>Hall Osaka</td>
<td>43. CLOSING LECTURE Europe’s Science, Technology and Innovation: Standing in the United World</td>
</tr>
<tr>
<td>14:40</td>
<td>Hall Osaka</td>
<td>44. Closing of CLINAM 2020</td>
</tr>
<tr>
<td>DAYS</td>
<td>TOPICS</td>
<td>PAGE</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
<td>------</td>
</tr>
<tr>
<td>Overview CHART</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Scientific Committee</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Introduction</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Target Audience</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

**Sunday Events**

**Mon. 18.5.**

1. Opening Addresses and Scientific Introduction to CLINAM 12/2020
2. Data Driven Interventions for Improving Medicine
3. to be announced
4. to be announced
5. New Therapeutic Modalities and their Impact on Unmet Medical Needs
6. Chemistry of New Nanomedicines
7. How do Nanoparticles Behave - Nano Interacting with Life
8. Bioinspired, Biological and Smart Materials for Boosting Nanomedicine;
9. Preclinical Projects and Ongoing Trials
10. Small Speeches on Submitted Posters and on University Village Posters 2020
11. G-SRS - Global Substance Registration System
12. Late Breaking and Ongoing Trials in Nanomedicine and Targeted Delivery

**Tues. 19.5.**

13. NCI Funding in USA for Nanotechnology in Cancer
14. Nanomedicine - Visions for 2020 -2030 based on lessons learned from past experience (CHEZY)
15. Integrated Assessment of Pharmacokinetics for Nanomedicine Development
16. Nanomedicine in Brain Injuries and Neurological Disorders
17. Advances in the field of Non-Biological Complex Drug Products (NBCDs) and their Follow-on Versions
18. Advanced Cell-based Assays and Biosensors for Assessment of Nanomedicine Performance and Safety
19. Second Session of Small Speeches on Submitted Posters and on University Village Posters 2020
20. The International Pharmaceutical Regulators Programme (IPRP)
21. Pharmaceutical Development and Manufacturing (APV session)
22. Immune Modulation by NM: New Therapeutic Approaches, Adverse Phenomena and Safety Testing
24. Clinical Molecular and Nuclear Imaging in Nanomedicine and Precision Medicine
25. The Regulatory Authorities’ Voice 2020
26. Antimicrobial Resistance
27. The Scope on Artificial Intelligence in the Medical Field
28. Poster Sessions Viewing and Individual Discussions and Explanations

**Wed. 20.5.**

29. Theranostic Concepts in Cancer Immunotherapy 17’ & 3’ Questions
30. Pancreatic Cancer seen by a Healthy Patient
31. Extracellular Vesicles in Nanomedicine – Exosomes
32. Nanomedicine in and against Infection and Inflammation
33. Nano- and Precision-Medicine in Rare and Neglected Diseases
34. Prevention; Safety and Risk Management for Nanomedical Drugs and Devices
35. Nanomedicine Characterization – Global State of the Art
36. UNESCO-Session - Ethics, Capacity Building, Medical Nanomaterials and Regulatory Matters
37. Nanoparticles and the Immune System
38. Atherosclerosis Nanomedicine
39. Nano-Physics and Mathematics in Healthcare
40. Conceiving Networking, Publishing and Regulatory Matters in Nanomedicine
41. How is the Swiss Personalized Health Network (SPHN) making health data Findable and Accessible?
42. Results of the 12th CLINAM-Summit by the Reporter of the Group collecting data from all sessions.
43. Closing Lecture

**General Information**

- Submissions of Abstracts for Speeches and Posters
- Registration for the Summit
- Fellowships
- Exhibition Pricing and Registration
- PRNANO, The CLINM Journal
- First Exhibitors at CLINAM 12/2020
- The Sponsors of CLINAM 12/2020
Scientific Committee of the 12th Summit

- Prof. Dr. med. Patrick Hunziker, University Hospital Basel (CH) (chair)
- Prof. Dr. med. Christoph Alexiou, University Hospital Erlangen (D)
- Prof. Dr. Lajos (Lou) Balogh, PhD, Editor-in-Chief, Precision Nanomedicine (CLINAM Journal PRNANO), Boston (USA)
- Prof. Dr. Yechezkel Barenholz, Hebrew University, Hadassah Medical School, Jerusalem (IL)
- Prof. Dr. med. Omid Farokhzad, Director, Center for Nanomedicine, Harvard Medical School and Brigham and Women's Hospital, Boston (USA)
- Prof. Dr. Dr. Twan Lammers, Institute for Experimental Molecular Imaging, RWTH Aachen University Clinic, Aachen (D)
- Prof. Dr. med. Dong Soo Lee, PhD, Chairman, Department of Nuclear Medicine Seoul National University (KOR)
- Dr. med. h.c. Beat Löffler, MA, CEO, CLINAM-Foundation, Basel (CH) (Programme, Organization & Realization)
- Prof. Dr. med. Marisa Papaluca Amati, Medical Advisor, Imperial College London, London (UK)
- Prof. Dr. André Nel, M.B. Ch.B., PhD, Distinguished Professor of Medicine, Associate Director California NanoSystems Institute, Chief of Nanomedicine and Director of the Center for Environmental Implications of Nanotechnology, UCLA, Los Angeles, (USA)
- Prof. Dr. Gert Storm, Institute for Pharmaceutical Sciences, Utrecht University, (NL) University of Twente (NL) and Department of Surgery, National University Hospital NUS, Singapore (SGP)
- Prof. Dr. Dr. h.c. Viola Vogel, Laboratory of Applied Mechanobiology, ETH Zürich (CH)

Introduction

Towards innovation in Clinical Nanomedicine

The CLINAM Summit is a globally unique event that brings together all stakeholders in nanomedicine, targeted medicine and precision medicine and in its 12th Conference emphasizes besides nanomedicine and related fields the role of digitalization and artificial intelligence. The present achievements will be highlighted and the ambitious goal is the interdisciplinary endeavor to improve the medicine of the future together. The Summit builds on the principle that fundamental and applied scientists, developers, clinicians, regulators and professionals from various related fields can mutually learn from each other to find better solutions together. This leads to new collaborations and consortia of experts that can accelerate the development and strengthen the efforts towards a medicine that delivers more benefits to patients and society.

Precision and personalization in nanomedicine and Patient Centric Medicine

Based on recent groundbreaking achievements of nanomedicine and related fields, the meeting will be a highlight to shape the path to personalized medicine. It will highlight the potential for prevention, diagnosis and therapy. The development of new tools, materials and new strategies for this growing field is enabling the translation of the progressive understanding of the genome and the immune system towards innovative new medical applications. The future of medicine includes a patient-centric approach which is a way healthcare systems can establish a partnership among practitioners, patients, and their families to align decisions with patients’ wants, needs, and preferences. This includes capacity building of the patient to be able for decisions and to participate in the own care.

AI and Digitalisation benefits

Artificial intelligence to achieve set goals in nanomedicine and genomics will be highlighted as an enabling discipline. Particular attention is given to the potential benefits, but also to the inherent risks and pitfalls of machine learning will be investigated to realize the full potential for precision medicine. Digitalization is needed to understand the immense data sets that arise in medicine, and its potential to improve the effectiveness of drugs in the patient. High-Performance Computing with massive computational power will be needed to gain a more detailed understanding not only of the generic aspects of disease but of its precise meaning in the individual, and will be used in comprehensive analyses and in simulation in virtual patients, predicting the most effective and least dangerous treatment strategy that can be applied in a cost-effective manner to each person individually.

Clinical Nanomedicine as Combined Predominant Cross Technology

CLINAM has evolved towards its role as the international forum for interdisciplinary fields of cutting edge medicine. In difference to all other human rights the right to globally good health is still neglected. Today over 2 billion people have no access to basic medicines, rendering them vulnerable to preventable misery and suffering. Today the speed of medical development opens perspectives that are far beyond what we expected two decades ago. Clinical Nanomedicine will have a predominant role in its character as cross technology for targeted drug delivery. The advancements in deciphering the genome and the understanding that the “one size fits all” for patients is overcome, gives new perspectives to understand all needs and facets for patient centric medicine. It will be inspiring to hear from outstanding experts about their future perspective of combining the toolbox of emerging technologies for Medicine and its application for the patient. It will be instructive to hear from the opinion leaders about the interaction of Nanomedicine, Genetics, Digitalization, AI and further novel technologies, that will enable us bringing
diagnosis and therapy to more patients in a world in which in the next two decades globally every individual should gain access to advanced, cost effective and precise healthcare.

Target Audience

The faculty includes the pioneers and opinion leaders in the fields of medicine, nanoscience and targeted medicine, who share experience in an interdisciplinary and interactive manner that widens mutual understanding for both sides. The summit and the exhibition are aimed at physicians, as well as scientists with a background in pharmacology, biology, physics, chemistry, biophysics, medicine materials science and engineering. Experts in artificial intelligence, digitalization and high performance computing show the implications in the healthcare sector. The meeting is a particularly useful source of knowledge for the targeted medicine and delivery community. The conference is also of interest for members of the regulatory authorities as well as policymakers, experts from industry in the field of life sciences, developers of new tools and materials for Nanomedicine, and all those investigating the potential of emerging technologies in the field of healthcare and their combinations. Experts from venture companies can acquire knowledge on existing and upcoming developments and novel products in the emerging field of nanomedicine and knowledge based medicine. Government authorities can profit from the regulator’s international sessions. Industrials find contacts for cooperation and get insight into the novel concepts and meet members of keen investigating startups with interest for working together. CLINAM is the worldwide melting pot for experts and a high-level communication platform where you meet those striving for equal goals.

First Programme

Sunday, May 17, 2020

All Sunday Events on the 2nd Floor, Halls Osaka and Samarkand. The Sunday of this Summit is reserved for official and unofficial gatherings.

12.00 Preparatory Meetings for the Teams of ESNAM, ISNM, PRNANO
14.30 General Assembly of the European Society for Nanomedicine
16.30 General Assembly of the International Society for Nanomedicine
17.15 Board Meeting of the Journal “Precision Nanomedicine”, Official Journal of CLINAM
17.15 SUNDAY LECTURE FOR YOUNG RESERACHERS AND STUDENTS
Topic Small Sizes for the Small: Nanomedicine Challenges and Opportunities in Pediatric Cancer
Prof. Dr. Alejandro Sosnik, Laboratory of Pharmaceutical Nanomaterial Science Department of Materials Science and Engineering, Technion Haifa (IL)
19.45 First Meeting for all Speakers: Dinner at the Swissôtel Le Plaza***** on the 1st Floor, Hall Helvetia

Monday, May 18, 2020

Session 1 Plenary Session

Monday, Hall Montreal, 08.30 – 09.15
1. Opening Addresses and Scientific Introduction to CLINAM 12/2020

Chair Beat Löffler, CEO, European Foundation for Clinical Nanomedicine, Basel (CH)

08.30 Opening Address from the European Foundation for Clinical Nanomedicine
Dr. med. h.c. Beat Löffler, MA, CEO, European Foundation for Clinical Nanomedicine, and Leader of Löffler & Associates Concept Engineering GmbH, Basel (CH)

08.36 Opening Address from the European Commission
Maria Pilar Aguar Fernandez, Head of Unit E.3 – Health Innovations, European Commission, DG Research & Innovation, Brussels (B) (TBC)

08.42 Opening Address from the Canton of Basel-Stadt
Dr. Lukas Engelberger, Member of the Executive Council of the Canton of Basel-Stadt, Basel (CH)

08.48 Opening Address from the Swiss Government
Dr. Gregor Haefliger, Vice Director and Head of the Research and Innovation division, State Secretariat for Education, Research and Innovation (SERI), Bern (CH) (TBC)
Prof. Dr. med. Patrick Hunziker, President of the International Society for Nanomedicine, University Hospital Basel, Head of the CLINAM-Lab, Basel (CH)

Session 2 Plenary Session

Monday, Hall Montreal, 09.15 – 10.15

2. Data Driven Interventions for Improving Medicine

About There is a hope that artificial intelligence and digitalization will allow clinicians to get faster to appropriate diagnosis and to get more time for their patients. Atomization can discharge medical doctors from the burden of clerical work and can fortify human capabilities. With the introduction of innovative data-driven tools into practice, mainly focusing on real-life effectiveness studies, predictive modeling, decision support tools and proactive care models clinicians will get precise novel data supporting the decisions in therapy to benefit of the patient.

Chair Prof. Dr. Yechezkel Barenholz, Hebrew University, Hadassah Medical School, Jerusalem (IL)

09.15 Computerized Medical Systems, Predictive Analytics and Big-data Informatics for Precision Medicine
Prof. Dr. med. Varda Shalev, MPH, Director, Institute of Research and Innovation, Maccabitech, Primary care physician, Maccabi Health Care Services, Associate Professor, School of Public Health, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv (IL)

09.50 Questions and Debate

10.00 Break

Session 3 Plenary Session

Monday, Hall Montreal, 101.30 – 11.15

3. Topic and Speaker to be announced

Chair Prof. Dr. med. Bengt Fadeel, Nanosafety & Nanomedicine Laboratory, Division of Molecular Toxicology, Institute of Environmental Medicine, Karolinska Institutet, Stockholm, (S)

11.05 Questions and Debate

Session 4 Plenary Session

Monday, Hall Montreal, 11.30 – 12.15

4. Topic and Speaker to be announced

Chair Prof. Dr. Jérôme Galon, Research Director, Chief French National Institute of the Health and Medical Research (INSERM) Laboratory of Integrative Cancer Immunology, Cordeliers Research Center, Paris (F)

11.45 Questions and Debate

12.00 Lunch

Session 5 1 of 4 Parallel Sessions

Monday, Hall Montreal, 13.15 – 16.15

5. New Therapeutic Modalities and their Impact on Unmet Medical Needs

About New molecular modalities have delivered therapeutic breakthroughs and are advancing to late clinical stages acting on previously undruggable, often intra-cellular biological targets. New modalities is a term that’s becoming a “catch-all” for any “unconventional” therapeutic of above average. The sophistication and complexity of new molecules is increasing, e.g. cell&gene products, nucleic acids, bi-functional molecules (protacs), nano-medical and other targeted delivery systems, antibody-drug and other-conjugates, peptides and other biologic molecules will be discussed.

Chair Dr. Karin Abitorabi, Novartis Senior Fellow Cell and Gene Therapy, Novartis Pharma AG, Basel (CH)

13.15 SiRNA Onpattro (Patisiran) – Lipid Nanoparticles Regulatory Considerations in the Approval of Onpattro, the first RNAi Therapeutic
Dr. Sarawathy V. Nochur, Senior Vice President, Chief Regulatory Officer, Regulatory Affairs, Alnylam Pharmaceuticals Cambridge, Massachusetts (USA)
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker and Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.30</td>
<td><strong>RNAntibody - a Therapeutic Option</strong></td>
<td>Dr. Patrick Baumhof, Vice President Formulation &amp; Delivery, CureVac AG, Tübingen (D)</td>
</tr>
<tr>
<td>13.45</td>
<td><strong>Atherosclerotic Cardiovascular Disease Revisited: The Need and Promise of Solving the Intractable Challenge of Adherence and Persistence with siRNA</strong></td>
<td>Dr. med. Clive A. Meanwell, Ph.D, Chief Innovation Officer, The Medicines Company, Parsippany, NJ (USA)</td>
</tr>
<tr>
<td>14.00</td>
<td><strong>The Development of Taclantis and other Novel Derived Formulations</strong></td>
<td>Dr. Ajay Khopade, Vice President - Formulation Development (Non-Orals) Sun Pharma Advanced Research Company Ltd., Vadodara, Gujat (IND)</td>
</tr>
<tr>
<td>14.15</td>
<td><strong>Research on GLP-1 with a Special Focus on Semaglutide Oral Delivery</strong></td>
<td>Dr. Jesper Lau, Vice President, Research Chemistry, Global Research Technologies, Novo Nordisk A/S, Copenhagen (DK)</td>
</tr>
<tr>
<td>14.30</td>
<td><strong>Next-generation Gene Editing Technology for Allogeneic Immune Cell Therapeutics</strong></td>
<td>Dr. Steven Kanner, Chief Scientific Officer, Caribou Biosciences, Berkeley, CA (USA)</td>
</tr>
<tr>
<td>14.45</td>
<td><strong>Antisense Strategies for Patients with Neurodegenerative Diseases</strong></td>
<td>Dr. Brett P. Monia, Chief Executive Officer, Ionis Pharmaceuticals, Inc., Carlsbad, California (USA)</td>
</tr>
<tr>
<td>15.00</td>
<td><strong>Innovative Cell and Gene Therapies for Non-oncology Indications</strong></td>
<td>Dr. Magdalena Obarzanek-Fojt, Principal Scientist Pharmaceutical Development, Novartis (CH)</td>
</tr>
<tr>
<td>15.15</td>
<td><strong>Novel FDA Guidance for Precision and Genetic Therapies</strong></td>
<td>Dr. med. Frank F. Weichold, PhD, Director of Critical Path and Regulatory Science Initiatives, Office of Regulatory Science &amp; Innovation (ORSI) and Office of the Chief Scientist/Office of the Commissioner Food and Drug Administration (FDA), Silver Spring, MD (USA)</td>
</tr>
<tr>
<td>15.30</td>
<td><strong>Questions and Debate</strong></td>
<td></td>
</tr>
<tr>
<td>16.15</td>
<td><strong>Break</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Session 6** 2 of 4 Parallel Sessions

**Monday, Hall Sidney, 13.15 – 16.15**

### 6. Chemistry of New Nanomedicines 12’ plus 3’ Q&D

**About**

Session in collaboration with the German Research Foundation (DFG) established “Collaborative Research Center on Nanodimensional Polymer Therapeutics for Tumor Therapy” (CRC 1066), Johannes Gutenberg University, Mainz (D) - This session will focus on the development of new carrier systems from a materials science perspective. It has the intention to demonstrate that there are medical needs beyond than classical tumor targeting, to which nanomedicine can be applied. Nanoparticles naturally accumulate in areas with a leaky vasculature like liver, areas of heavy inflammation and spleen or lymph nodes, which are central organs of the immune system.

**Chair**

Dr. habil. Matthias Barz, Lecturer at Institute of Organic Chemistry, Johannes Gutenberg-University of Mainz (D) and Prof. Dr. Rudolf Zentel, Institute of Organic Chemistry, University of Mainz (D)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker and Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.15</td>
<td><strong>Nanomaterials for RNA Delivery: From RNAi to CRISPR/Cas Gene Editing</strong></td>
<td>Prof. Dr. Daniel J. Siegwart, Siegwart Research Group, Simmons Cancer Center, Department of Biochemistry UT Southwestern Medical Center, Dallas TX (USA)</td>
</tr>
<tr>
<td>13.30</td>
<td><strong>Polymer Prodrug Conjugates</strong></td>
<td>Dr. Julien Nicolas, CNRS Director of Research. Institut Galien Paris-Sud, UMR 8612, Faculté de Pharmacie de Châtenay-Malabry, Univ. Paris-Sud (F)</td>
</tr>
<tr>
<td>13.45</td>
<td><strong>Multivalent Nanosystems for Tumor Targeting</strong></td>
<td>Prof. Dr. Rainer Haag, Institute of Chemistry and Biochemistry Organic Chemistry, Freie Universität, Berlin (D)</td>
</tr>
</tbody>
</table>
Supramolecular Vaccines
Prof. Pol Besenius, Professor for Macromolecular Chemistry, Institute of Organic Chemistry, University of Mainz, Mainz (D)

Polypet(o)ides for Therapy of Infectious Diseases
Dr. habil. Matthias Barz, Lecturer at Institute of Organic Chemistry, Johannes Gutenberg-University of Mainz, Mainz (D)

Functional Therapeutic Hybrids
Prof. Dr. Tanja Weil, Max-Planck-Institute for Polymer Research (MPIP), Mainz (D)

Polymeric Micelles in Cancer Therapy
Prof. Dr. Horacio Cabral, Researcher, Department of Materials Engineering, University of Tokyo (J)

Is Protein Corona Formation in Plasma an Intrinsic Property of all Nanoparticles?
Prof. Dr. Rudolf Zentel, Institute of Organic Chemistry, University of Mainz, Mainz (D)

Polypeptide-based Conjugates as Versatile Therapeutics
Prof. Dr. Maria Vicent, Head of Polymer Therapeutics Laboratory, Centro de Investigación Príncipe Felipe, Valencia (E)

Prodrugs and Associated Opportunities in Localized Drug Synthesis
Prof. Dr. Alexander N. Zelikin, Associate Professor, Department of Chemistry / Interdisciplinary Nanoscience Center – INANO-Kemi, Aarhus (DK)

Use of Click Chemistry to Prepare Orientated Display of Antibodies on Nanomedicines
Prof. Dr. Christopher Scott, Director Centre of Cancer Research and Cell Biology, Chair of Pharmaceutical Biosciences, The Queen’s University of Belfast, Belfast (UK)

Further Questions and Debate

Session 7 3 of 4 Parallel Sessions

Monday, Hall Singapore, 13.15 – 16.15

7. How do Nanoparticles Behave - Nano Interacting with Life 12’ plus 3’ Q&D

About
This session aims at understanding the mechanisms of nanomaterial interactions with living systems and the environment across the entire life cycle of nanomaterials. What are the mechanisms and how do nanoparticles behave in different biological environments? Presentations include cell interaction, the importance of degradation and excretion and new methods for evaluation and screening of nanoparticles for therapeutic applications. Delivery methods and imaging for evaluating the behavior of nanomaterials in vivo and the prediction of in vivo behavior of nanoparticles will be discussed.

Chair
Prof. Dr. Barbara Rothen-Rutishauser, Co-Chair Bio Nanomaterials, Adolphe Merkle Institute, University of Fribourg (CH)

Short keynote lecture

13.15 Setting up an Interdisciplinary Program to Save Life for Patients with Nonalcoholic Steatohepatitis NASH
Prof. Dr. med. Chuen Neng, Heart Centre, Singapore, Deputy Director, National University Heart Centre, Singapore, National University Health System, Chairman, Centre for Healthcare Innovation and Medical Engineering, National University of Singapore (SGP)

13.35 What Cells can do with Nanomaterials
Prof. Dr. Barbara Rothen-Rutishauser, Co-Chair Bio Nanomaterials, Adolphe Merkle Institute, University of Fribourg (CH)

13.50 Entry of Nanoparticles into Cells: Mechanisms and Consequences
Prof. Dr. Kirsten Sandvig, Professor, Institute for Cancer Research, The Norwegian Radium Hospital Oslo University Hospital Montebello, Oslo (N)
Cell Response to Different (Nano-) Particle Stiffness  
Prof. Dr. Alke Fink, Chair Bio Nanomaterials, Adolphe Merkle Institute, University of Fribourg (CH)

Nanoparticles for Clinical Use: Importance of Degradation and Excretion  
Dr. Tore Skotland, Centre for Cancer Biomedicine, Institute for Cancer Research, University of Oslo, (N)

Nanotechnology and Biological Drugs: a Powerful Alliance  
Prof. Dr. Maria José Alonso, Editor-in-Chief of the Drug Delivery and Translational Research (DDTR) Journal, Past President of the Controlled Release Society (CRS,) CIMUS Research Institute, Campus Vida, University of Santiago de Compostela (E)

Delivery of Nucleic Acids in Vivo using SS-cleavable and pH-responsive Lipid-like Materials  
Dr. Daniel Zucker, Business Development Manager for Drug Delivery Systems, NOF Europe GmbH, Frankfurt (D)

Nanocarriers of Photosensitizers Used in Photodynamic Therapy  
Prof. Barbara Klaejnert-Maculewicz, Department of General Biophysics, University of Lodz, (P)

Targeting Polymersomes to the Cell Nucleus,  
Prof. Dr. Roderick Lim Ph.D., Argovia Professor for Nanobiology, Biozentrum and the Swiss Nanoscience Institute, University of Basel, Basel (CH)

Cellular Fate of Nanoparticles Delivered to the Murine Lung: a New Role of Macrophages?  
Lin Yang, MSc, Dr. Otmar Schmid group (Comprehensive Pneumology Center/Institute of Lung Biology and Disease, Helmholtz Center Munich and Technical University of Munich (D)

Further Questions and Debate

Session 8 4 of 4 Parallel Sessions

Monday, Hall Rio, 13.15 – 15.10

8. Bioinspired, Biological and Smart Materials for Boosting Nanomedicine;

About This session will elucidate the recent development of nanocarrier systems for drug delivery applications, the properties, the size, the main organic nanocarrier (such as polymer-based micelles, liposomes, and dendrimers) and inorganic nanoparticles in applications (such as carbon nanotubes, gold nanoparticles, and quantum dots). The session will also focus on novel fabrication strategies and materials architectures for realizing particles with enhanced drug delivery and biomedical imaging properties, as guided by nature;

Chair Prof. Dr. Paolo Decuzzi, Senior Researcher and Professor, Director of the Laboratory of Nanotechnology for Precision Medicine, Italian Institute of Technology, Genova (I)

Using Biology to Design Novel Nanomedicines  
Prof. Dr. Paolo Decuzzi, Senior Researcher and Professor, Director of the Laboratory of Nanotechnology for Precision Medicine, Italian Institute of Technology, Genova (I)

Engineering Responsive Nanoparticles and Devices against Biofilm Infections  
Prof. Dr. Sc. Georgios A. Sotiropoulos, Assistant Professor, Department of Microbiology, Tumor and Cell Biology, Karolinska Institutet, Stockholm (S)

Biocompatibility Assessment of Graphene-based Materials  
Prof. Dr. med. Bengt Fadeel, Nanosafety & Nanomedicine Laboratory, Division of Molecular Toxicology, Institute of Environmental Medicine, Karolinska Institutet, Stockholm (S)
13.45 Catalytic Fluoroalkylations and Applications in Late Stage Fluorination of Bioactive Molecules
Prof. Dr. Xingang Zhang, Shanghai Institute of Organic Chemistry Chinese Academy of Sciences, Shanghai (ROC)

13.55 Tumor Exosome-Based Nanoparticles and Artificially Cloaked viral Nanovaccines for Chemo-immunotherapy Applications
Prof. Dr. Hélder A. Santos, Head of Division of Pharmaceutical Chemistry and Technology and Director of Nanomedicines and Biomedical Engineering Lab, Drug Research Program, Faculty of Pharmacy and Helsinki Institute of Life Science, University of Helsinki (FIN)

14.05 Development of Personalized Cancer Vaccine
Dr. Julianna Lisziewicz, Nanomedicine Sote, Semmelweis University, Budapest, (H)

14.15 Molecular Bioengineered Nanomedicines for Targeted Delivery of Peptides in Modulation of Diabetes
Dr. Bruno Sarmento, PhD, Principal Investigator, Nanomedicines & Translational Drug Delivery, Group Leader i3S - Instituto de Investigação e Inovação em Saúde INEB - Instituto de Engenharia Biomédica Universidade do Porto, Porto (PRT)

14.25 Implications of carbon nanoparticles for potential biosensors and therapeutic applications
Prof. Dr. Debabrata (Dev) Mukhopadhyay, Departments of Biochemistry and Molecular Biology and Physiology and Biomedical Engineering, Florida DOH Cancer Research Chair, Mayo Clinic College of Medicine and Science, Jacksonville, Florida (USA)

14.35 Nitric Oxide-Dependent Biodegradation of Graphene Oxide Reduces Inflammation
Dr. Guotao Peng, Division of Molecular Toxicology, Institute of Environmental Medicine Karolinska Institutet Stockholm (S)

14.45 Questions and Debate

Session 9 Continuation 4 of 4 Parallel Sessions

Monday, Hall Rio, (same Hall) 15.10 – 16.15
9. Preclinical Projects and Ongoing Trials
About
This session is dedicated to the current trends and challenges in the clinical translation of Nano medicines as well as the potential pathways for translational development and Commercialization. The speakers present preclinical first and ongoing trials.
Chair Dr. Cristianne J. F. Rijcken, PharmD, PhD, Founder and CSO, Cristal Therapeutics, Maastricht (NL)

15.10 Designing Novel Nanosystems Consisting on Combined Gene and Immune Therapies for Non-Small Cell Lung Cancer
Dr. Cristina Fornaguera i Puigvert, Group of Materials Engineering (Gemat), IQS School of Engineering, University Ramon Llull, Barcelona (E)

15.20 Translation to the Clinic of an Ultrasmall Gadolinium Based Nanoparticle: AGuIX
Prof. Dr. Francois Lux, Associâtes Professor, Lyon 1 University, Institut Lumière Matière, Equipe FENNEC, UMR CNRS 5306, Villeurbanne (F)

15.30 Nanomedicines to Deliver Dual-targeting Dual-action Pt(IV) Chemotherapeutic Complexes for Enhanced Anticancer Activity and Reduced Nephrotoxicity
Prof. Dr. Giorgia Pastorin, Associate Professor and Deputy Head (Research), Pharmacy Department, National University of Singapore, Singapore (SGP)

15.40 The Nanoprimer: a Nanoparticle Designed to Transiently Occupy the Mononuclear Phagocytic System In Order to Increase Nanomedicine-based Treatments Efficacy
Dr. Matthieu Germain, CEO, COURADIGM, Paris (F)

15.50 Questions and Debate

16.15 Break
Session 10  Foyer Session Small Speeches

Monday, Congress Foyer, 13.15 – 16.15

10. First Session of Small Speeches on Submitted Posters and on University Village Posters 2020

About
Poster submitters, researchers and scientists at universities, participating in the University Village 2020 can apply for a small speech of 4 minutes, serving to highlight the research activities in nanotechnology/health. The speeches comprise a maximum of three slides. • Slide 1: General introduction to the topic’s future and outlook on translation of the work presented in a way that is accessible to the highly interdisciplinary audience. • Slide 2: Some of the highlights of the submitter’s work and institution’s work. • Slide 3: The proof, how the work at the university/institute fits into the area of nanomedicine and targeted delivery including showing the outlook on translation of the work.

Chair  Dr. Sc. nat. Ruth Schmid, Vice President Marketing, SINTEF Industry, Biotechnology and Nanomedicine, Polymer Particles and Surface Chemistry; Chair of the European Technology Platform on Nanomedicine (ETPN), Trondheim (N)

13.15  Introduction
Dr. Sc. nat. Ruth Schmid, Vice President Marketing, SINTEF Industry, Biotechnology and Nanomedicine, Polymer Particles and Surface Chemistry; Chair of the European Technology Platform on Nanomedicine (ETPN), Trondheim (N)

Programme to be inserted in Wallets of Summit

16.15  Break

Session 11  Satellite 1

Monday Hall Samarkand, 13.15 -16.15

11. G-SRS - Global Substance Registration System

About
Session in Collaboration with the FDA USA. At present regulators around the globe (as well as many pharmaceutical companies) maintain similar individual databases for substances used in medicinal products. The content of these databases is overlapping to a large extent. A commonly recognized global database containing validated and quality-controlled substance information would lead to a significant reduction in duplicated work, better quality of the substance data, and ultimately an improved description and coding of the composition of approved medicinal products. The implementation of a system such as G-SRS is therefore highly desirable, particularly in the European setting with its abundance of national regulatory agencies. The session will address challenges and progress towards a global IDMP-compliant database for substances used in medicinal products.

Chair  Dr. Larry Callahan, Global Substance Registration System (G-SRS), Office of Health Informatics, Office of Chief Scientist FDA|HHS, New Hampshire, Silver Spring, MD (USA) and Dr. Philipp Weyermann, Head of Unit Case Management 2 Swissmedic, Bern (CH)

13.15  Capturing Complex Vaccines, including Live Attenuated Viruses in a Structured Substance Database
Dr. Herman Diederik MSc PharmD, EU-SRS Substance Lead Unicom Horizon 2020, Substance expert, Amsterdam (NL)

13.30  Capturing Gene and Cell Therapy Products in a Structured Substance Database
Dr. Marcel Hoefnagel PhD, Senior Assessor Biopharmaceuticals, Medicines Evaluation Board, European Expert in Quality of ATMP, Vaccines and Allergens, Utrecht (NL)

14.45  Industry Perspective on G-SRS
Dr. Jean-Gonzague Fontaine, IDMP Sustainability Strategy Lead, GlaxoSmithKline Vaccines, Wavre (BE)

15.00  A Regulatory Agency Perspective on G-SRS
Dr. Philipp Weyermann, Head of Unit Case Management 2, Swissmedic, Bern (CH)

15.15  Further Speakers to Come

15.45  Questions and Debate
**Session 12**  
Plenary Session

Monday Hall Montreal, 16.45 – 19.00

12. Late Breaking and Ongoing Trials in Nanomedicine and Targeted Delivery 12' plus 3' Q&D

About This session is dedicated to the current trends and challenges in the clinical translation of Nanomedicine as well as the potential pathways for translational development and Commercialization. The speakers present late breaking and ongoing trials.

Chair Dr. Neil Desai  
CEO, Aadi Bioscience Inc. Pacific Palisades, CA, USA.

16.45 Results from Clinical Phase 1 and 2 Evaluations of CPC634  
Dr. Cristianne J. F. Rijcken, PharmD, PhD, Founder and CSO, Cristal Therapeutics, Maastricht (NL)

17.00 Results of a Registration Trial of ABI-009 (Nanoparticle Albumin Bound Sirolimus) in Malignant PEComa and other Clinical Studies”  
Dr. Neil Desai CEO, Aadi Bioscience Inc., Pacific Palisades, CA (USA).

17.15 The ORION Program: Twenty Clinical Trials of the siRNA, Inclisiran in More than 20,000 Patients. What we’ve Learned So Far and What Comes Next  
Dr. Clive A. Meanwell, M.D., Ph.D, Chief Innovation Office, The Medicines Company, Parsippany, (USA)

17.30 Talidox, the World’s Smallest Liposomal Doxorubicin: Insights from First Applications in Patients and Immuno-Oncological Potential  
Dr. Stefan Halbherr, PhD, Manager Research and Development, InnoMedica Holding AG, Bern (CH)

17.45 Inotersen and Beyond - A Comprehensive Antisense Therapeutic Strategy for all Forms of ATTR  
Dr. Brett P. Monia, Chief Executive Officer, Ionis Pharmaceuticals, Inc., Carlsbad, California (USA)

18.00 Novel Peptide-oligonucleotide Complexes for mRNA and Gene Editing Therapeutics  
Dr. Gilles Divita, Aadigen, LLC, Pacific Palisades, CA (USA) and CEO of Divincell SAS, Montpellier (F)

18.15 A Novel Intraperitoneal Therapy for Gastric, Pancreatic and Ovarian Cancer with DFP-10825, a Unique RNAi Therapeutic Targeting Thymidylate Synthase, in Peritoneal Disseminated Xenograft Model  
Prof. Dr. Tatsuhiro Ishida, Professor Department of Pharmacokinetics and Biopharmaceutics Institute of Biomedical Sciences, Tokushima University, Tokushima and Dr. Kiyoshi Eshima, President & Founder of Delta-Fly Pharma, Inc., Tokushima (J) (Preclinical Trial)

18.30 Clinical Experience with i.v. Liposomal Glucocorticoid Formulations Targeting Inflammation  
Dr. Josbert Metselaar, PharmD, PhD, Department of Experimental Molecular Imaging, RWTH Aachen University Clinic, Aachen (D) and CEO Enceladus Pharmaceuticals, Naarden (NL)

18.45 Further Questions and Debate

19.00 End of Day 1

19.40 Leaving from the Tram stop opposite the Congress Center for the Official Evening Brokerage Dinner  
Depart from Messeplatz to Landgasthof, Riehen Dorf. *(Be punctual, not to miss the ride)*

20.00 Aperitif in the Garden on behalf of the Canton of Basel-Stadt

20.30 Brokerage Dinner at Landgasthof Riehen. Cultural Event and the CLINAM Dwarf Award 2020

**Tuesday, May 19, 2020**

**Session 13**  
Plenary Session

Tuesday, Hall Montreal, 08.15 – 08.50

13. NCI Funding in USA for Nanotechnology in Cancer

About The US National Cancer Institute (NCI) established the Alliance for Nanotechnology in Cancer in 2005 to recognize the value of convergence between nanotechnology and cancer research. It was the first program to support large-scale cooperative research in this area of medicine. The past fourteen years of the program’s operation resulted in publication of more than 4,000 peer reviewed research articles, formation of several start-up companies
collaborating with NCI-funded academic centers and committed to translation and commercialization of nanotechnology-based interventions and over 20 clinical trials associated with these interventions. The talk will provide the update on the program activities and outline its new strategic directions.

Chair
Prof. Dr. med. Patrick Hunziker, President of the International Society for Nanomedicine, Basel (CH)

08.15 Update of the Alliance of the National Cancer Institute for Nanotechnology in Cancer
Dr. Piotr Grodzinski, Director, NCI Alliance for Nanotechnology in Cancer, National Cancer Institute, Bethesda, Maryland (USA)

08.50 Questions and Debate

Session 14 Plenary Session

Tuesday, Hall Montreal, 09.00 – 10.10

14. Nanomedicine - Visions for 2020 -2030 based on lessons learned from past experience (CHEZY)

We are optimistic regarding the future of nanomedicines, we better understand now why the high expectations from the field have not been achieved yet. This session will summarize these lessons and is aiming to propose means to overcome current obstacles thereby coming closer to meet the desired expectations and hopes. We will take a fresh and close look at the multidisciplinary and complex currently clinically used nanomedicines, what they achieve and what they missed. So far the field of Nanomedicine and the nano-drugs developed are focus on the treatment of solid tumors and fungal infections. It seems that the focus on tumor will continue, the question is why other diseases that can benefit are neglected. This raises a major question on the role and contribution to Medicine. Another important question is, if and to what extent nanomedicine has an impact on Biotechnology, Genetics and Precision Medicine, Digital Medicine and Artificial Intelligence. Will nano-medicine play a role and to what extent in the above medicine related areas, and how important is this role? Can we identify the areas in which nanomedicine as a field and nano-drugs are a must? We will discuss where the field of nano-medicine should go in the next decade.

Chair
Prof. Dr. Yechezkel Barenholz, Hebrew University, Hadassah Medical School, Jerusalem (IL)

09.00 Statement 1
Dr. Gerard M. Jensen, Director Technical Services at Gilead Sciences Hod Hasharon Business Park Hod Hasharon (IL)

09.10 Statement 2
Prof. Dr. med. Alberto A. Gabizon, Hebrew University - School of Medicine - Shaare Zedek MC Oncology Institute, Jerusalem (IL)

09.20 Statement 3
Dr. Marina A. Dobrovolskaia, Ph.D., MBA, PMP, Senior Principal Scientist, Head, Immunology Section Nanotechnology Characterization Lab, Leidos Biomedical Research Inc., Frederick National Laboratory for Cancer Research Frederick MD (USA)

09.30 Statement 4
Speaker to be announced

09.40 Plenary Debate

10.10 Break

Session 15 1 of 4 Parallel Sessions

Tuesday, Hall Montreal, 10.40 -12.15

15. Integrated Assessment of Pharmacokinetics for Nanomedicine Development

About Various nanomedicine systems have been developed for different routes of administration. More specifically, the structural modalities comprise dendrimers, nanocrystals, nanoemulsions, liposomes, solid lipid nanoparticles, micelles, and polymeric nanoparticles. Nanodrug systems have been employed to improve the pharmacodynamics and physicochemical process challenges across various pharmaceutical substances. As with conventional drug development, the translation of nanomedicines is underpinned by a robust understanding of the exposure-response relationship, and nanotechnology offers bespoke opportunities to dramatically improve pharmacokinetic behavior. For example, enhanced bioavailability of orally administered drugs, half-life extension of injected drugs, and a reduction in off-target drug accumulation have all been explicitly demonstrated. Therefore, nanodrug systems offer opportunities to lower the frequency of administration while maximizing efficacy and minimizing systemic side
effects. Collective clinical benefits are therefore expected across emergent issues such as patient adherence (e.g. long-acting injectable nanomedicines preclude the need for daily ingestion of tablets) to medication and safety of agents with a narrow therapeutic index (e.g. specific cellular or tissue targeting). The pharmacokinetic advantages of nanomedicine systems must also be balanced against the potential for new safety considerations that stem from changes in drug distribution, prolonged drug exposure and/or the nanocarrier material itself. A better understanding of alterations in the pharmacokinetic-pharmacodynamics relationship that occur upon entrapment of drug within a nanoparticle including explicitly the efficacy and toxicity profiles will enable safe and effective new medicines to be more rapidly brought through clinical development.

Chair Prof. Dr. Andrew Owen, PhD, FRSB, FBPhS, Professor of Pharmacology, Molecular and Clinical Pharmacology University of Liverpool (UK)

10.40 Introduction
Prof. Dr. Andrew Owen, PhD, FRSB, FBPhS, Professor of Pharmacology, Molecular and Clinical Pharmacology University of Liverpool (UK)

Short keynote lecture

10.50 Pharmacokinetic and Clinical Correlations of Pegylated Liposomal Mitomycin-c Prodrug (Promitil) in Colo-rectal Cancer Patients
Prof. Dr. med. Alberto A. Gabizon, Hebrew University - School of Medicine - Shaare Zedek MC Oncology Institute, Jerusalem (IL)

11.10 The Quest for Nanotechnology Platforms to Target the Central Nervous System
Prof. Dr. Alejandro Sosnik, Laboratory of Pharmaceutical Nanomaterial Science Department of Materials Science and Engineering, Technion Haifa (IL)

11.20 Nanoparticle-loaded Microarray Patches to Extend Pharmacokinetic Exposure
Prof. Dr. Ryan Donnelly Chair in Pharmaceutical Technology, School of Pharmacy Queen’s University Belfast, Belfast (UK)

11.30 Modifying Drug Carrier Transport through Nanotechnology to Widen the Therapeutic Index
Prof. Dr. Cameron Alexander Professor of Polymer Therapeutics, Head of Division of Molecular Therapeutics and Formulation, Faculty of Science, Nottingham (UK)

11.40 Concentration-dependent Versus Concentration Independent Safety and Biocompatibility Considerations for Nanomedicines
Dr. Neill Liptrott B.Sc., M.Sc., Ph.D., FHEA, Lecturer Molecular and Clinical Pharmacology, University of Liverpool (UK)

11.50 In Vitro Tools to Understand Nanomedicine Pharmacokinetics Early in Development
Dr. Marie Millard Department of Biology, Signals and Systems in Cancer and Neuroscience, University de Lorraine, Nancy (F)

12.00 Questions and debate

12.15 Lunch

Session 16 2 of 4 Parallel Sessions

Tuesday, Hall Sidney, 10.40 -12.15

16. Nanomedicine in Brain Injuries and Neurological Disorders
About This session gives insight into novel skills, ideas and research developments in the field of Brain issue, Neurology and Therapeutics and shows how besides other technologies Nanomedicine is involved in the development.
Chair Prof. Dr. med. François Berger, BrainTech Lab-INSERM U 1205, University Grenoble Alpes, Grenoble (F)

10.40 Theranostic Nanophysics for the Deciphering, Prevention and Therapy of Brain Diseases
Prof. Dr. med. François Berger, BrainTech Lab-INSERM U 1205, University Grenoble Alpes, Grenoble (F)

10.55 Nano-formulation of Pomegranate Seed Oil
Dr. Ruth Gabizon, Department of Neurology, Hadassah University Hospital, Jerusalem (IL)
11.05  **Brain Clinical Informatics – Promise and Barriers towards Precise Medicine**  
**Dr. Mira Marcus-Kalish**, Director, International Research Affairs, Tel Aviv University Ramat Aviv, Tel Aviv (IL)

11.15  **Graphene Quantum Dot for Parkinson’s Disease**  
**Prof. Dr. Byung Hee Hong**, Professor, Department of Chemistry, Seoul National University, Seoul, Seoul, (KOR)

11.25  **Selective entry of Lipid Vesicles Into the Brain Post Intracerebral Haemorrhage Offers Novel Therapeutic Opportunities**  
**Dr. Zahraa Al-Ahmady MSc, FHEA**, Senior Lecturer in Pharmacology Pharmacology Department, School of Science and Technology, Nottingham Trent University, Nottingham (UK)

11.35  **Talineuren: A Regenerative Nanodrug against Neurodegeneration**  
**Dr. Camille Peitsch**, Scientist, Research & Development, InnoMedica Holding AG, Bern (CH)

11.45  **Developing Polymeric Nanoformulation for Neurodegenerative Disorders via Intranasal Delivery**  
**Dr. Julie Tzu-Wen Wang**, Senior Research and Teaching Fellow in Nanomedicine, Institute of Pharmaceutical Science King's College London, London (UK)

11.55  **Questions and Debate**

12.15  **Lunch**

**Session 17**  3 of 4 Parallel Sessions

Tuesday, Singapore, 10.40 -12.15

17. Advances in the field of Non-Biological Complex Drug Products (NBCDs) and their Follow-on Versions

**About**  
Non-biological complex drug products (NBCDs) and their follow-on versions poses significant challenges to the scientific community. The family of NBCDs consists of products such as liposomes, glatiramoids, iron carbohydrate complexes and ocular emulsions. While increasing numbers of complex innovative products are entering the market, at the same time regulatory agencies across the globe have approved follow-on versions of the first generation of NBCDs. This session provides an update on the state of affairs in the field of NBCDs. Following good CLINAM practice it concludes with a lively debate.

**Chair**  
**Dr. Jon de Vlieger**, Coordinator NBCD Working group, Lygature, Utrecht (NL) and  
**Dr. Scott E. McNeill**, Former Director, Nanotechnology Characterization Laboratory, Frederick, MD (USA)

10.40  **Where to go with Nano?**  
**Prof. Daan Crommelin**, Emeritus Professor at the Department of Pharmaceutics, Utrecht University (NL), Adjunct Professor at the Department of Pharmaceutics and Pharmaceutical Chemistry at the University of Utah (USA), Co-founder of Octoplus, Leiden (NL)

10.50  **EC: Towards Science-based Regulations for NBCDs, the International Perspective**  
**Dr. rer. nat. Susanne Bremer-Hoffmann**, European Commission, Directorate General Joint Research Centre, Directorate F - Health, Consumers and Reference Materials, Ispra (IT)

11.00  **Sharing Experience in Overcoming Upscaling Challenges for Nanomedicines**  
**Dr. Mark van Eldijk**, Ardena ChemConnection BV, Mariakerke (B)

11.10  **The Road Ahead for mRNA Nano-formulations**  
**Dr. Örn Almarsson**, Ph.D. Head, Delivery Sciences | Moderna Therapeutics, Cambridge, MA (USA)

11.20  **From Manufacturing to Bed: Special Consideration for the Handling of Nanomedicines**  
**Dr. Beat Flühmann**, Global Lead Non-Biological Complex Drugs. Vifor Pharma, Glattbrugg (CH)

11.30  **Questions and Debate**

12.15  **Lunch**
Session 18  4 of 4 Parallel Sessions

Tuesday, Hall Rio, 10.40 – 12.15


About
Adherent two-dimensional (2D) cell monolayers are indispensable tools in nanomedicine/nanosafety research, but such culture systems do not reflect the situation in vivo, where cells grow and operate within a complex three-dimensional (3D) microenvironment. As a result, 2D cell culture often generates misleading and nonpredictive data for in vivo responses. Increasing attention is therefore being placed on scaffold/matrix-based and scaffold-free 3D cultures and other related cell-based technologies (e.g., organ-on-a-chip systems), which closely simulate structural complexity, cell type, cytoarchitecture and homeostasis analogous to tissues and organs. However, there are still challenges with engineered 3D cell culture systems, as in limitations with diffusional transport of oxygen and other nutrients as well as culture-dependent altered gene expression that requires addressing. This session examines technological developments of 3D cell culture systems and related advanced cell-based assay systems that can more realistically mimic the in vivo cell responses on nanomedicine challenge and provide more predictable results to in vivo tests.

Chair Prof. Dr. Moein Moghimi, Professor of Pharmaceutics and Nanomedicine, School of Pharmacy, Newcastle University, Institute of Cellular Medicine, School of Medicine, Newcastle University (UK) and Adjoint Professor, University of Colorado Medical Center, Boulder, CO (USA)

10.40 Assessing Nanomedicine Safety through Real-time Monitoring of Mitochondrial Respiration and Metabolomic Profiling
Prof. Dr. Moein Moghimi, Professor of Pharmaceutics and Nanomedicine, School of Pharmacy, Newcastle University, Institute of Cellular Medicine, School of Medicine, Newcastle University (UK) and Adjoint Professor, University of Colorado Medical Center, Boulder, CO (USA)

10.50 Complex 3D Cell Structures on Inorganic Surfaces
Dr. Silke Krol, Laboratory for personalized medicine, National Institute of Gastroenterology, "S. de Bellis" Research Hospital, Castellana Grotte, Bari (I)

11.00 Further Speakers

11.30 Questions and Debate

12.15 Lunch

Session 19  Foyer Session Small Speeches

Tuesday, Congress Foyer, 10.40 -12.15

19. Second Session of Small Speeches on Submitted Posters and on University Village Posters 2020

About
Poster submitters, researchers and scientists at universities, participating in the University Village 2020 can apply for a small speech of 4 minutes, serving to highlight the research activities in nanotechnology/health. The speeches comprise a maximum of three slides. • Slide 1: General introduction to the topic’s future and outlook on translation of the work presented in a way that is accessible to the highly interdisciplinary audience. • Slide 2: Some of the highlights of the submitter’s work and institution’s work. • Slide 3: The proof, how the work at the university/institute fits into the area of nanomedicine and targeted delivery including showing the outlook on translation of the work.

Dr. Sc. nat. Ruth Schmid, Vice President Marketing, SINTEF Industry, Biotechnology and Nanomedicine, Polymer Particles and Surface Chemistry; Chair of the European Technology Platform on Nanomedicine (ETPN), Trondheim (N)

10.40 Introduction
Dr. Sc. nat. Ruth Schmid, Vice President Marketing, SINTEF Industry, Biotechnology and Nanomedicine, Polymer Particles and Surface Chemistry; Chair of the European Technology Platform on Nanomedicine (ETPN), Trondheim (N)

Programme to be inserted in Wallets of Summit

12.15 Lunch

Session 20 Closed Group Meeting for Regulatory Authorities

Tuesday, Hall Mexico, 12.15 – 13.15

12.15 Group Lunch for Regulatory Authorities (Hall Mexico)
Tuesday Hall Osaka, 13.15 – 15.45

**20. The International Pharmaceutical Regulators Programme (IPRP)**

This Session is on Invitation only and the Related Programme will be sent to the Concerned Regulatory Authorities’ members.

**Chair** Dr. Michael Johnston, Research Scientist, Principal Investigator, Health Canada, Ottawa (CND)

13.15  **Internal Session for Invited Members**

12.15  **Lunch in the Foyer**

---

**Session 21  1 of 4 Parallel Sessions**

Tuesday, Hall Montreal, 13.15 – 15.45

**21. Pharmaceutical Development and Manufacturing (APV session)**

A session in collaboration with the APV, Mainz - The International Association for Pharmaceutical Technology (APV) will feature the industrial perspective on pharmaceutical development and manufacturing of nanomedicine and precision medicine.

**Chair** Dr. Bernd Riebesehl, Principal Fellow, Novartis Pharma AG, Basel (CH)

13.15  **Manufacturing Aspects Enabling Stem Cell Products**

Dr. Karin Abitorabi, Novartis Senior Fellow Cell and Gene Therapy, Novartis Pharma AG, Basel (CH)

13.30  **Manufacturing Aspects of Gene-modified Products**

Dr. Magdalena Obarzanek-Fojt, Principal Scientist Pharmaceutical Development, Novartis, Basel (CH)

13.45  **Manufacturing Considerations for Bispecific and Multispecific Antibodies**

Dr. Mark Chiu, PhD, Associate Director, Process Analytical Support of Large Molecule Analytical Development at Janssen Research & Development, Raritan, NJ (USA)

14.00  **Large Scale GMP Production of Liposomes**

PD Dr. Peter van Hoogevest, Head Scientific Department, Lipoid GmbH, Ludwigshafen, (D)

14.15  **Guiding mRNA Formulations from Laboratory into Clinical Trials. Lessons learned from Development and Optimization of Liposomal Formulations.**

Dr. Andreas Wagner, Head Liposome Technology, Polymun Scientific, Immunobiologische Forschung GmbH, Klosterneuburg (A)

14.30  **Recent Advances in Antisense Technology at Ionis Pharmaceuticals**

Dr. Brett P. Monia, Chief Executive Officer, Ionis Pharmaceuticals, Inc., Carlsbad, California (USA)

14.45  **Title to be announced**

Dr. Wouter Tonnis, Pharmaceutical Technology Scout, Bayer AG, Berlin (D)

15.00  **Further Speaker**

15.15  **Questions and Debate**

15.45  **Break**

---

**Session 22  2 of 4 Parallel Sessions**

Tuesday, Hall Sydney 13.15 – 15.45

**22. Immune Modulation by Nanomedicines: New Therapeutic Approaches, Adverse Phenomena and Safety Testing**

For therapeutic nanoparticles, developed for human use there is an absolute need to withstand critical toxicological analysis. The value of any developed drug depends on the delivery concept and the exclusion of potential toxicity. This session will showcase the state of the art in toxicological investigations.
13.15  Infusion Reactions as Critical Safety Barriers: Models, Mechanisms, Future Directions  
Prof. Dr. med. János Szebeni, Head of the Nanomedicine Research and Education Center, Semmelweis University, Budapest (H)

13.25  A Novel Antigen Delivery System: Antigen-selective Delivery to Splenic Marginal Zone B Cells via Repeated Injections of PEGylated Liposomes  
Prof. Dr. Taro Shimizu and Prof. Dr. Tatsuhiko Ishida, Department of Pharmacokinetics and Biopharmaceutics, Institute of Biomedical Sciences, Tokushima University, Tokushima (J)

13.35  Liposome Targeting to the Spleen as a Strategy for Cancer Vaccination; the Issue of Complement Activation  
Prof. Dr. Gert Storm, Institute for Pharmaceutical Sciences, Utrecht University, (NL)

13.45  Clinical Case Study: Liposomal Methyl Prednisolone: How Preclinical Studies Helped the Translation  
Dr. Yaelle Bavli-Felsen, Membrane and Liposome Research Lab, Hebrew University – Hadassa Medical School, Jerusalem (IL)

13.55  Emerging Biomarkers of Nanoparticle Immunotoxicity: an Outlook in Future  
Dr. Marina A. Dobrovolskaia, Ph.D., MBA, PMP, Senior Principal Scientist, Head, Immunology Section Nanotechnology Characterization Lab, Leidos Biomedical Research Inc., Frederick National Laboratory for Cancer Research Frederick MD (USA)

14.05  Case study: Pre-existing Anti-PEG Antibodies: Safety Concerns and Challenges with Detection  
Prof. Dr. Steve Roffler, Research Fellow. Institute of Biomedical Sciences Academia Sinica, Adjunct Associate Professor, National Yang Ming University, Taipei (TWN)

14.15  Role of Anti-PEG IgM in Infusion Reactions in Pigs  
Dr. Gergely Tibor Kozma, MSc, PhD Senior Research Fellow at the Nanomedicine Research and Education Center at Semmelweis University, Budapest (H)

14.25  Safety Assessment of Sarah Nanotechnology in Swine Models  
Dr. Sarah Kraus, Ph.D., M.B.A, Head of Biology Department, New Phase Ltd., Petah Tikva (IL)

14.35  Immunomodulation with Nucleic Acids Nanoparticles  
Prof Dr. Kirill Afonin, Vice President of The International Society of RNA Nanotechnology and Nanomedicine (ISRNN), The University of North Carolina at Charlotte (UNC), Department of Chemistry, Charlotte, NC (USA)

14.45  Further Speakers

15.05  Questions and Debate

15.45  Break

Session 23  3 of 4 Parallel Sessions

Tuesday, Hall Singapore, 13.15 – 15.45
23. Platforms for Targeting, Drug Delivery, Diagnostics, Drug Development, Design Strategies and Manufacturing for Precision Medicine (12’ plus 3’ Q&D)

About  In the last years, many different systems and strategies have been developed for drug targeting to pathological sites, as well as for visualizing and quantifying important physiological processes. The production and application of nanoparticles in health bears challenges with respect to assessing efficacy, quality and safety. Machine learning and artificial intelligence are being developed and could accelerate the lifecycle of nanomedical products and the scientific guidance for nanomedical products. A drug delivery system must execute multiple tasks, which involves the highest degree of smartness. In the last years, many different systems and strategies have been developed for drug targeting to pathological sites, as well as for visualizing and quantifying important physiological processes. The production and application of nanoparticles in health bears challenges with respect to assessing efficacy, quality and
safety. In addition to that the large scale GMP production and manufacturing of particles is very painstaking work for chemists and chemical engineers to realize.

Chair  Dr. Marieluise Wippermann, CEO, TecoMedical Ltd, Sissach (CH)

13.15  The Digital Twin, an Essential Tool in Personalizing Therapy and Prevention  
Prof. Dr. Hans Lehrach, Director, Head, Department of Vertebrate Genomics, Max Planck Institute for Molecular Genetics, Berlin (D)

13.30  Barcoded Cancer Nanomedicines and Nano immunotherapies Perform Differently in the Primary Tumor and in the Metastasis  
Prof. Dr. Avi Schroeder, PhD, Associate Professor of Chemical Engineering Laboratory for Targeted Drug Delivery and Personalized Medicine Technologies, Technion - Israel Institute of Technology, Haifa (IL)

13.45  PEG-shedding and Coronation: Two Key Events Unlocking Cellular Uptake and mRNA-delivery Efficiency of LNPs  
Dr. Audrey Gallud, Senior Researcher in cell biology and Nanotechnology, Department of Biology and Biological Engineering, Division of Chemical Biology, Chalmers University of Technology, Göteborg (S)

14.00  Driving Large Scale CAR-T Cell Manufacturing in Reality  
Dr. Alexander Huber, Global CMC Head, Cell & Gene Therapy Unit, Novartis Pharma AG, Basel (CH)

14.15  Nanoparticle Design Strategies for Effective Liver Cancer Immunotherapy  
Prof. Dr. Gerrit Borchard, Translational research Centre in Oncohaematology, Biopharmaceutical Science Group Leader, CRTOH associate member, Geneva-Lausanne School pf Pharmacy (EPGL), Geneva (CH)

14.30  Manipulating Cells’ Function with Novel Lipid Nanoparticles: from RNA Therapeutics to Genome Editing  
Prof. Dr. Dan Peer, Chair, Tel Aviv University Cancer Biology Research Center, Director, Center for Translational Medicine, Director, Laboratory of Precision NanoMedicine, Dept. of Cell Research & Immunology, and Dept. of Materials Science & Engineering, Tel Aviv University, Tel-Aviv (IL)

14.45  Mini-nano Delivery System for Drugs and Check Point Inhibitors for Blocking Growth of HER2+ Breast Cancer  
Prof. Dr. Eggehard Holler, Professor of Neurosurgery, Director of Drug Synthesis, Nanomedicine Research Center, Department of Neurosurgery Cedars Sinai Medical Center Los Angeles, CA (USA)

15.00  Novel Targeting Strategies to Enhance Tumor Drug Penetration in Pancreatic Cancer  
Prof. Dr. Jai Prakash, Ph.D., Head of Targeted Therapeutics and Nanomedicine Department of Biomaterials, Science and Technology, University of Twente, Enschede (NL)

15.15  Rapid Development and Scalable Manufacture of Nanomedicine Based Gene Therapies  
Dr. James Taylor, CEO & Co-Founder, Precision NanoSystems, Vancouver, BC (CND)

15.30  Further Questions and Debate

15.45  Break

Session 24  4 of 4 Parallel Sessions

Tuesday, Hall Rio, 13.15 – 15.45

24. Clinical Molecular and Nuclear Imaging in Nanomedicine and Precision Medicine

About  Imaging plays a critical role in nanomedicine and precision medicine and includes screening, early diagnosis, guiding treatment, getting response to therapy, and assessing likelihood of disease recurrence. In this session different aspects of imaging will be elucidated with focus on the latest achievements and developments in the field

Chair  Prof. Dr. med. Christoph Alexiou, University Hospital Erlangen (D)

13.15  Precision Nanomedicine Using Iron Oxide Nanoparticles and Robotics  
Prof. Dr. med. Christoph Alexiou, University Hospital Erlangen (D)

13.30  Graphene Quantum dot as MRI T1 agent  
Prof. Dr. Yun-Sang Lee, Research Professor, Nuclear Medicine, SNUCM Nuclear Medicine and SNUH Nuclear Medicine, Seoul (KOR)
Biochemical Functionality of Magnetic Particles as Nanosensors: How Far-away are we to Implement them into Clinical Practice?
Prof. Dr. med. Beatrice Beck Schimmer, Vice President Medicine, Institute for Anesthesiology, University Hospital Zürich, Zürich (CH)

Personalized Medicine for Renal Dysfunction using AGuIX Nanoparticles
Dr. Nathalie Mignet, Head of the UTCBS lab, Chemical and Biological Technologies for Health, University Paris Descartes INSERM U1267, CNRS UMR8258, Faculty of Pharmacy, Paris (F)

Nanoplatforms for the Design of Engineered Biopolymer Nanostructures for Therapy and Multimodal Imaging Applications
Dr. Enza Torino, PhD, University of Naples Federico II, Department of Chemical Materials and Production Engineering (DICMaPI, Napoli (I)

Further Speakers

Questions and Debate

Break

Session 25 Plenary Session

Tuesday, Hall Montreal, 16.15-17.45

25. The Regulatory Authorities’ Voice 2020

About
At every CLINAM Summit, the international regulatory authorities make statements on the global cooperation to come to an optimal framework for regulatory matters in nanomedicine and precision medicine. The session helps to create trust and mutual understanding between all stakeholders in nanomedicine and the regulatory authorities. This lowers the barriers to contact the regulatory authorities at an early stage of projects.

Chair Maria Pilar Aguar Fernandez, Head of Unit E.3 – Health Innovations, European Commission, DG Research & Innovation, Brussels (B)

Invited Participants - Session to be finalized by March 2020

Europa
Dr. rer. nat. Susanne Bremer-Hoffmann, European Commission, Directorate General Joint Research Centre, Directorate F - Health, Consumers and Reference Materials, Ispra (I)
Dr. Dolores Hernán Pérez de la Ossa, Quality Office, European Medicines Agency, (EMA) Amsterdam (NL) (tbc)
Robert E. Geertmsa, M.Sc., Senior Scientist, Centre for Health Protection RIVM - National Institute for Public Health and the Environment RIVM, Bilthoven (NL) (tbc)

Canada
Dr. Michael Johnston, Research Scientist, Principal Investigator, Health Canada, Ottawa (CND)

China
Prof. Dr. Yuliang Zhao, Key Laboratory for Biomedical Effects of Nanomaterials and Nanosafety, Chinese Academy of Sciences, Beijing, (CN) (tbc)

USA
Dr. Katherine Tyner, PhD, Associate Director for Science (acting), Office of Pharmaceutical Quality CDER/FDA, Springfield, IL (USA)
Dr. Anil Patri, Chair, Nanotechnology Task Force, Director, NCTR-ORA Nanotechnology Core Facility, U.S. Food and Drug Administration (FDA), National Center for Toxicological Research (NCTR), Jefferson, AR (USA)
Dr. med. Frank F. Weichold, PhD, Director of Critical Path and Regulatory Science Initiatives, Office of Regulatory Science & Innovation (ORSI) and Office of the Chief Scientist/Office of the Commissioner Food and Drug Administration (FDA), Silver Spring, MD (USA)
Dr. Wenlei Jiang, Senior Science Advisor, U.S. Food and Drug Administration, Maryland (FDA)

Japan
NII, National Institute of Health Sciences, Kawasaki (JPN) (tbc)

India
Prof. Dr. med. Amit Dinda, PhD, Professor of Department of Pathology, All India Institute of Medical Sciences, and General Secretary for the Indian Society for Nanomedicine, Delhi (IND)

Africa
Prof. Dr. Hulda Shaidi Swai, Extraordinary Professor at University of Pretoria, School of Life Science and Bio-engineering, The Nelson Mandela African Institution of Science and Technology, Pretoria (ZA)

Australia
Dr. Anne Field, Senior Toxicologist, Toxicology Section Scientific Evaluation Branch Therapeutic Goods Administration Department of Health Woden Act (AUS) (tbc)

Switzerland
Roman Leist, Scientific Expert, Swissmedic, Bern (CH)
**Session 26  Plenary Session**

**Tuesday, Hall Montreal, 17.50 - 18.25**

**26. Antimicrobial Resistance**

*About*  
Hospital bacterial infections are occurring at much higher than desired frequency. In many cases, these infections are severe and due to antimicrobial resistance (AMR) their treatment is very difficult. There is no question that prevention in such cases is much better, safer, and cheaper than trying to cure by treatment. This presentation will describe two different modalities of prevention. One passive and the second active. The common denominator of both is that they are based on nano-technology. Also, both are aiming to reduce demand for antibiotics by preventing healthcare-associated infections from occurring in the first place, and making every effort to prevent transmission when they occur. Currently, the critical efforts of infection prevention do not get the desired attention and this presentation is aimed to show options that are expected to bring the prevention to the front of the clinical settings.

*Chair*  
Prof. Dr. Joy Wolfram, Assistant Professor and Director, Nanomedicine and Extracellular Vesicles Laboratory, Mayo Clinic, Jacksonville, Florida (US)

17.50  
**Hospital Bacterial Infection Prevention**  
Prof. Dr. Yechezkel Barenholz, Hebrew University, Hadassah Medical School, Jerusalem (IL)

18.15  
**Questions and Debate**

**Session 27  Plenary Session**

**Tuesday, Hall Montreal, 18.25 – 19.00**

**27. The Scope on Artificial Intelligence in the Medical Field**

*About*  
Today, AI mostly means machine learning. Can it learn from "real-world data" for the benefit of healthcare and medical research? AI has proved useful in image diagnosis and the processing of clinical language. Intelligent systems predict future events and support clinical decisions. AI can also improve the interface between clinicians and computers. Yet there are limitations: large amounts of training data are needed, but shared data are difficult to construct due to patient privacy. Clinicians want to understand the rationale behind AI-based recommendations - they don’t want black boxes. Systems are often not portable: AI trained in one hospital gets in trouble in a place with different data infrastructures and workflows. AI is often expected to revolutionize research: real-world data analytics is valuable for generating scientific hypotheses, but AI cannot substitute prospective studies.

*Chair*  
Dr med. h.c. Beat Löffler, MA, CEO of the European Foundation for Clinical Nanomedicine, Basel (CH)

18.25  
**Advantages and Limits of Artificial Intelligence**  
Prof. Dr. med. Stefan Schulz, Institute for Medical Informatics, Statistics and Documentation, Medical University of Graz, Graz (A)

18.45  
**Questions and Debate**

**Session 28  Plenary Session**

**Tuesday, Congress Foyer, 18.55 – 19.35**

**18.55  **  
28. Poster Sessions Viewing and Individual Discussions and Explanations

**19.30  **  
End of Day 2

**19.45  **  
Speakers leaving in front of the revolving doors of Congress Center and walk to Hotel Merian-Spitz

**20.10  **  
Speakers’ Dinner on the Terraces of Merian Spitz

**Wednesday, May 20, 2020**

**Session 29  Plenary Session**

**Wednesday, Hall Montreal, 08.30 – 10.40**

**29. Theranostic Concepts in Cancer Immunotherapy 17’ & 3’ Questions**

*About*  
Immunotherapy is revolutionizing the treatment of cancer. It can induce unprecedented responses in advanced-stage patients, including complete cures, but it unfortunately only works in a relatively small portion of patients. In this session, diagnostic, therapeutic and theranostic concepts will be discussed that assist in unraveling the
interactions between (nano-) immunotherapeutic, cancer cells and immune cells in individual patients, in order to help stratify responders from non-responders, and to thereby aid in improving the outcomes of cancer immunotherapy.

Chair Prof. Dr. Dr. Twan Lammers, Institute for Experimental Molecular Imaging, RWTH Aachen University (D)

08.30 Introduction: Nanomedicine and Theranostics in the Era of Immunotherapy
Prof. Dr. Dr. Twan Lammers, Department of Nanomedicine and Theranostics, Institute for Experimental Molecular Imaging, University Hospital RWTH Aachen (D)

08.50 Redefining Cancer Immunotherapies for Patients
Prof. Dr. Jérôme Galon, Research Director, Chief French National Institute of the Health and Medical Research (INSERM) Laboratory of Integrative Cancer Immunology, Cordeliers Research Center, Paris (F)

09.10 Antibody-cytokine Fusion Proteins for the Treatment of cancer and of chronic inflammation
Prof. Dr. Dario Neri, Department of Chemistry and Applied Biosciences, Swiss Federal Institute of Technology (ETH Zürich) ETH Hoenggerberg, Zürich (CH)

09.30 Deep Learning-based Diagnostic Concepts in Cancer Immunotherapy
Prof. Dr. med. Tom Lüdde, Senior Physician, Department of Gastroenterology, Nutritive Diseases and Intensive Care Medicine, Scientific Group Leader, University Hospital RWTH Aachen (D)

09.50 Molecular Imaging and Artificial Intelligence in Cancer Immunotherapy
Prof. Dr. Bernd Pichler, Director and Chair Department of Preclinical Imaging and Radiopharmacy University Hospital Tübingen, Tübingen (D)

10.10 Therapeutic Targeting of Trained Immunity
Prof. Dr. Willem Mulder, Professor of Radiology at Icahn School of Medicine at Mount Sinai, NY (USA), Professor of Radiology, ISMMS Professor of Cardiovascular Nanomedicine, Director, Nanomedicine Program, AMC, Amsterdam (NL), Professor of Precision Medicine at the department of Biomedical Engineering, Technology University of Eindhoven (NL)

10.30 Further Questions and Debate
10.40 Break

Session 30 Plenary Session

Wednesday, Hall Montreal, 11.10 - 12.00
30. Pancreatic Cancer seen by a Healthy Patient

About Lora Kelly is a 6 year pancreatic cancer survivor remaining in treatment. She runs a monthly support group for pancreatic cancer patients and their caregivers. Lora also formed and chairs her state’s chapter of the National Pancreas Foundation (NPF) to educate and fundraise for research respective to pancreatic cancer. Lora shares difficult truths about her cancer journey to help other patients and to inspire scientists to develop better therapies and find their way to a cure. Lora has spoken for various organizations such as the World Molecular Imaging Congress, Johns Hopkins, NPF, Let’s Win, and Relay for Life, and the Controlled Release Society.

Chair Prof. Dr. Dr. Twan Lammers, Institute for Experimental Molecular Imaging, RWTH Aachen University, Aachen (D)

11.10 Cancer Journey: A Patient’s Perspective
Lora Kelly, Chapter Chair of the Central PA Chapter of the National Pancreas Foundation (NPF) and Director of Clinical Education for HACC, Bethesda, MD (USA)

11.45 Questions and Debate
12.00 Lunch

Session 31 1 of 4 Parallel Sessions

Wednesday, Hall Montreal, 13.00 -14.50
31. Extracellular Vesicles in Nanomedicine – Exosomes

About Vesicles contain various biomolecules and mediate short- and long-distance intercellular communication in the body. Recent work has shown that extracellular vehicles (EVs) can be engineered to display therapeutic properties.
This session will cover new research in extracellular vesicles with respect to their applications in nanomedicine. Exosomes and other EVs have recently emerged as promising biological nanoparticles for drug delivery and diagnostics. Preclinical findings have already resulted in clinical trials with EVs applications. Nevertheless, many challenges including large-scale clinical-grade manufacturing, characterization, potential immunogenicity, and storage need to be overcome in order to exploit the full potential of EVs for therapy and diagnosis. This session will identify major hurdles and promising areas of for EVs in nanomedicine.

Chair
Prof. Dr. med. Raymond Schiffelers, Professor of Nanomedicine, Clinical Chemistry and Haematology, University Medical Center Utrecht UMCU, Utrecht (NL)

13.00 Functional RNA Delivery with Extracellular Vesicles
Prof. Dr. med. Raymond Schiffelers, Professor of Nanomedicine, Clinical Chemistry and Haematology, University Medical Center Utrecht UMCU, Utrecht (NL)

13.10 Evaluation of Bovine Milk Exosomes as Nano-medicinal Delivery Vehicle for Locked Nucleic Acid Antisense Oligonucleotides (LNA-ASO)".
Dr. Michael Keller, Senior Principal Scientist, Pre-Clinical CMC Pharma Research and Early Development Roche Innovation Center Basel, Basel (CH)

13.20 Extracellular vesicles increase the efficacy of enzyme replacement therapy in Lysosomal Storage Disorders
Dr. Ibane Abasolo, Functional Validation and Preclinical Research, CIBBIM-Nanomedicine Hospital Universitari Vall d’Hebron, Vall d’Hebron Institut de Recerca (VHIR), Barcelona (E)

13.30 Brain Theranostics with Extracellular Vesicles
Prof. Dr. med. Dong Soo Lee, PhD, Chairman, Department of Nuclear Medicine, Seoul National University Seoul (ROK)

13.40 Exosomes: as Dual Pancreatic Cancer Therapy and Diagnosis
Prof. Dr. Khuloud T. Al-Jamal, Chair of Drug Delivery & Nanomedicine, King’s College London (UK)

13.50 3 further speakers

14.20 Questions and Debate

14.50 Break

Session 32 2 of 4 Parallel Sessions

**Nanomedicine in and against Infection and Inflammation**

The efforts in nanomedicine research have provided scientists with nanocarriers designed to match the specific requirements for the treatment of different inflammatory and infectious disease conditions. The advances made with such nanocarrier technologies in targeted nanomedicine and controlled release will be highlighted.

13.00 The Use of Liver-targeting Tolerogenic Nanoparticles for Treatment of Allergic and Autoimmune Disease
Prof. Dr. André Nel, M.B. Ch.B., PhD, Distinguished Professor of Medicine, Chief, and Division of NanoMedicine, Research Director California NanoSystems Institute, and Director of UC Center for the Environmental Impact of Nanotechnology, Associate Editor ACS Nano, Los Angeles (USA)

13.15 Epigenetic-profiling of Macrophages during Inflammation
Group Leader, Laboratory of Applied Mechanobiology, ETH Zürich (CH)

13.30 Anti-inflammatory Biogenic Adipose Nanoparticles for Combination Therapy
Prof. Dr. Joy Wolfram, Assistant Professor and Director, Nanomedicine and Extracellular Vesicles Laboratory, Mayo Clinic, Jacksonville, Florida (USA)

13.45 Nanocrystal – Polymer Particles for a Sustained Treatment of Osteoarthritis
Dr. Olivier Jordan, Senior lecturer, Institute of Pharmaceutical Sciences of Western Switzerland University of Geneva, Geneva (CH)

14.00 Application of Silver Nanoparticles in Burn Wound Healing – taking Laboratory Findings to Clinical Use
Prof. Dr. Kenneth Kak-Yuen Wong, MB, ChB, Ph.D, FRCSEd, FCSHK, FHKAM, Clinical Associate Professor, Chief of the Division of Paediatric Surgery, The University of Hong Kong (HKG)
How Physical Factors Tune the Pro-inflammatory Response of Macrophages
Prof. Dr. Dr. h.c. Viola Vogel, Head of the Laboratory of Applied Mechanobiology, ETH Zürich (CH)

Questions and Debate after each talk

Break

Session 33 3 of 4 Parallel Sessions

Wednesday, Hall Singapore 13.00 -13.45
33. Nano- and Precision-Medicine in Rare and Neglected Diseases

About
Parasites are the causative agents of an overabundance of human diseases. In the absence of effective vaccines, their sustainable control largely depends on chemotherapy but is jeopardized by the evolution of drug resistance. While this threat is particularly acute for malaria, it also affects other parasitoses and the vectors. Nanoparticles offer hope to circumvent drug resistance, for instance by improving drug delivery to the target. This session will discuss how new successful medicines can help to grow the pipeline of candidates for rare and neglected diseases.

Chair
Prof. Dr. Pascal Mäser, Head, Parasite Chemotherapy, Swiss Tropical & Public Health Institute, Basel (CH)

13.00 Nanocarriers targeted to the mosquito stages of malaria: curing the insect has its advantages
Prof. Dr. Xavier Fernàndez Busquets, PhD, Nanomalaria Joint Unit, Associate, Institute for Bioengineering of Catalonia, Barcelona, Member of the Barcelona Centre for International Health Research, Barcelona (E)

13.10 Nanoformulation to Improve Parasite Chemotherapy: Research Examples from Trypanosoma and Plasmodium spp.
Prof. Dr. Pascal Mäser, Head, Parasite Chemotherapy, Swiss Tropical & Public Health Institute, Basel (CH)

Prof. Dr. Anthony A. Attama, Drug Delivery and Nanomedicines Research Group, Department of Pharmaceutics and Pharm. Microbiology, Faculty of Pharmaceutical Sciences, University of Nigeria, Nsukka, Enugu State (NGA)

13.30 Questions and Debate

Session 34 Continuation 3 of 4 Parallel Sessions

Wednesday, Hall Singapore 14.00 -14.50
34. Prevention; Safety and Risk Management for Nanomedicines and Devices

About
The application of nanotechnologies in healthcare holds groundbreaking potential for innovation but simultaneously bears many challenges with respect to assessing efficacy, quality and safety.

Chair
Robert E. Geertsma, M.Sc., Senior Scientist, Centre for Health Protection RIVM - National Institute for Public Health and the Environment, Bilthoven (NL)

13.45 Safety Evaluation of Complex Multifunctional Nanomaterials and the Challenges for Therapeutic Application
Prof. Dr. med. Amit K Dinda, PhD, Professor-Incharge, Division of Renal & Transplant Pathology Department of Pathology, All India Institute of Medical Sciences, General Secretary, Indian Society of Nanomedicine (ISNM), New Delhi (IND) and Honorary Professor, Deakin University, Australia (AUS)

Risk Management for Nanomedical Products
Robert E. Geertsma, M.Sc., Senior Scientist, Centre for Health Protection RIVM - National Institute for Public Health and the Environment, Bilthoven (NL)

14.05 Regulatory Guidance for Nanomedicine during the entire Product Lifecycle
Dr. Katherine Tyner, PhD, Associate Director for Science (acting), Office of Pharmaceutical Quality CDER/FDA, Springfield, IL (USA)

14.15 Safety Testing of Iron oxide Containing Nanoparticles for Later Clinical Use
PD Dr. László Dézsi, PhD, Senior Researcher, Adjunct Professor, Semmelweis University, Institute of Pathophysiology, Nanomedicine Research and Education Center, Budapest (H)
14.25  Nanomedicine today – ‘Quality by design’ or ‘Trial and error’?
Prof. Dr. habil. Matthias G. Wacker, Associate Professor, Department of Pharmacy, National University of Singapore NUS, (SGP)

14.35  Questions and Debate

14.50  Break

Session 35  4 of 4 Parallel Sessions

Wednesday, Hall Rio 13.00 -14.50

35. Nanomaterial Characterization – Global State of the Art

About  Nanotechnology for medical purposes has been termed nanomedicine. Its definition is related to the use of nanomaterials for diagnosis, monitoring, control, prevention and therapy of diseases. In the last decade the definition of nanomaterials has been controversial and we have seen a manifold of attempts to classify the different types of nanotechnologies in the medical space. We look in this session experienced experts show the present pathways to success with different materials and clinical applications.

Chair  Dr. Scott E. McNeil, Former Director, Nanotechnology Characterization Laboratory, Frederick, MD (USA)

13.00  Worldwide Development and characterization of Nanomaterials / Nanomedicines
Dr. Scott E. McNeil, Former Director, Nanotechnology Characterization Laboratory, Frederick, MD (USA)

13.10  European Nanomaterial Characterization Laboratory – How to continue and Lessons learned
Dr. Sc. nat. Ruth Schmid, Vice President Marketing, SINTEF Industry, Biotechnology and Nanomedicine, Polymer Particles and Surface Chemistry; Chair of the European Technology Platform on Nanomedicine (ETPN), Trondheim (N)

13.20  Safety by Design Concept Applied to the Use of Polymeric Nanobiomaterials for Drug Delivery
Dr. Peter Wick, Head Particles-Biology Interactions, EMPA - Swiss Federal Laboratories for Materials Science and Technology, St. Gallen (CH), Lecturer ETH Zürich (CH)

13.30  Determining what really counts: Modeling and measuring nanoparticle number concentrations
Dr. Matthias Rösslein, Senior Scientist, EMPA Swiss Federal Laboratories for Materials Science and Technology, St. Gallen (CH)

13.40  Transparency, Reproducibility and Translation of Nanomedicine! Tackling the Complexity
Prof. Dr. Adriele Prina-Mello, PhD, Ussher Assistant Professor/LBCAM Director Trinity Translational Medicine Institute (TTMI)/Department of Clinical Medicine, School of Medicine and AMBER/CRANN, Trinity College Dublin, University of Dublin (IRL)

Dr. Michael Johnston, PhD, Research Scientist, Centre for Biologics Evaluation and Genetic Therapies Directorate, Health Canada, Ottawa (CND)

14.00  From SOPs to Standards for Nanomedicine
Dr. Luigi Calzolai, PhD, Project Leader, Joint Research Center of the European Commission, Ispra (I)

14.15  Questions and Debate

14.50  Break

Session 36  Satellite 2

Wednesday, Hall Samarkand 13.00 -14.50

36. UNESCO-Session - Ethics, Capacity Building, Medical Nanomaterials and Regulatory Matters

About  The fourth technological revolution started in the last decade and since three years has a huge acceleration that will fundamentally change our lives. In healthcare we have new forms of drug discovery and biomedical research. The technological equipment for the patients is already using artificial intelligence and digitalization as part of personalized medicine. However in this race towards better health care and improved methods in medicine still many patients do not receive the best care possible, either because research to support clinical decision making with high-quality evidence is lacking or because evidence-based practices are not yet routinely implemented but in stage of development. Developments always include risks, regulatory safety aspects, capacity building aspects and ethical
concerns. The UNESCO-Chair on Materials Science and Engineering of the University of Strasbourg (F), the U.S. Food and Drug Administration (US) and the European Materials Research Society (F) jointly build an interdisciplinary team of speakers. They will highlight the ethical, educational and regulatory concerns and debate how the future training of the users shall be and the interesting question, whether the future role of clinicians will change.

Chair Dr. Anil Patri, Chair, Nanotechnology Task Force, Director, NCTR-ORA Nanotechnology Core Facility, U.S. Food and Drug Administration (FDA), National Center for Toxicological Research (NCTR), Jefferson, AR (USA)

13.00 Ethical Reasoning of Physicians
   NN Speaker to be announced

13.15 Nanomaterials in Medicine
   Prof. Dr. Bert Müller, Thomas Straumann-Professor for Material Science in Medicine, Allschwil (CH)

13.45 Regulatory Matters in Nano- and Precision Medicine
   Dr. Anil Patri, Chair, Nanotechnology Task Force, Director, NCTR-ORA Nanotechnology Core Facility, U.S. Food and Drug Administration (FDA), National Center for Toxicological Research (NCTR), Jefferson, AR (USA)

13.45 Capacity Building and Management for Clinical Practice
   Prof. Dr. Frances Richmond, PhD, Professor and Chair, Department of Regulatory and Quality Sciences, Member of the International Center for Regulatory Science, Director of the Regulatory Science Program, USC School of Pharmacy, University of Southern California, Los Angeles, CA (USA)

13.50 Questions and Debate

14.00 Break

Session 37 1 of 4 Parallel Sessions

Wednesday, Hall Montreal, 15.20 – 16.45

37. Nanoparticles and the Immune System

About Nanoparticle carriers allow to change the biodistribution of their cargo, making it possible to target specific cells and tissues, as well as the immune system or to exclude others. This opens the possibility to steer a complex immune response by targeting key players and to induce an immunological treatment of cancer, to enhance antiviral vaccination or reduce unwanted autoimmunity and allergic reactions. For this nanocarriers allow a co-delivery of active compounds further modifying the response.

Chair Prof. Dr. med. Volker Mailänder, Center for Translational Nanomedicine, University Medicine of the Johannes-Gutenberg University Mainz (D) and Prof. Dr. med. Stephan Grabbe, Director of the Department of Dermatology, Medical Center & Polyclinic, Speaker of the Research Center for Immunotherapy, Mainz (D)

15.20 The Complement System vs. Complex Nano-immunomodulation
   Prof. Dr. Moein Moghimi, Professor of Pharmaceutics and Nanomedicine, School of Pharmacy, Newcastle University, Institute of Cellular Medicine, School of Medicine, Newcastle University (UK) and Adjoint Professor, University of Colorado Medical Center, Boulder, CO (USA)

15.35 Role of the Protein Corona in Nanoparticle Uptake by Immune Cells
   Prof. Dr. med. Volker Mailänder, Center for Translational Nanomedicine, University Medicine of the Johannes-Gutenberg University Mainz (D)

15.50 Modulation of Macrophage Polarization in the Tumor Microenvironment by Nanoparticles
   Prof. Dr. rer. nat. Tobias Bopp, Professor for Molecular Immunology, Institute for Immunology, Johannes Gutenberg University Mainz (D)

16.05 Polymeric Nanoformulations to Promote Immunotherapy Responses
   Dr. Lutz Nuhn, Junior Group Leader, Department of Prof. Tanja Weil, Max-Planck-Institute for Polymer Research (MPIP), Mainz (D)
The Effect of Glioblastoma Microenvironment on Local Immune System: FDA Preparation of Clinically Suitable Nanobioconjugates

Prof. Dr. med. Julia Y. Ljubimova, Ph.D., Professor of Neurosurgery and Biomedical Sciences, Director of Nanomedicine Research Center, Department of Neurosurgery Oncology Translational Program, Samuel Oschin Comprehensive Cancer Center CEDARS-SINAI MEDICAL CENTER, Los Angeles CA, (USA)

Questions and Debate

Short break for going to Plenary Hall
15.35  **Artificial Intelligence and Causal Inference: Deep Learning for Estimating Treatment Effect**  
Prof. Dr. Volker Roth, Department of Mathematics and Computer Science, Leader of the Biomedical Data Analysis Group, University Basel (CH)

15.50  **Combining existing and novel developments for sustainable medical solutions**  
Prof. Dr. Gabriel Aeppli, Head of Photon Science Division (PSD), Paul Scherrer Institute, Villigen Professor of Physics at the ETH Zürich and at the EPFL Lausanne, Zürich (CH)

16.05  **Rationalizing Nanoparticle Design: from Architecture to Function**  
Prof. Dr. Inge Herrmann, Group Leader, Swiss Federal Laboratories for Materials Science and Technology (Empa), St. Gallen

16.20  **A Computational Protocol for the in Silico Maturation of Antibody Fragments**  
Dr. Sara Fortuna, Coordinator of the Self-Assembly, Recognition, and Applications group at the Department of Chemical and Pharmaceutical Sciences, University of Trieste (I)

16.35  **Questions and Debate**

16.45  **Short break for going to Plenary Hall**

**Session 40  4 of 4 Parallel Sessions**

Wednesday, Hall Rio, 15.20 – 16.45

40. Conceiving Networking, Publishing and Regulatory Matters in Nanomedicine

*About:* In the last 5 years we have been flooded by publications and one can find a conference dedicated to nanomedicine almost every day. This session aims to evaluate and integrate all attempts that shape the future of nanomedicine and precision medicine. Importantly, to assess the role of scientific information exchange in these endeavors? Regulatory authorities are developing worldwide networks, but how important and valid ethical considerations and social networks? There may be skilled concepts how to regulate the field, but we are far from bringing together definitions and processing principles for nanodrugs to form a systematic network similar to all other drugs. How can we select the best and useful papers out of the huge number of available publications? What is the future role of Nanomedicine and how can the claimed “high potential” become reality What Management is needed? ?

**Chair**  
Prof. Dr. Lou Balogh, Editor-in-Chief, Precision Nanomedicine, Boston (USA)

15.20  **Precision Nanomedicine, and behind the controversial directions of science**  
Prof. Dr. Lou Balogh, Editor-in-Chief, Precision Nanomedicine, Boston (USA)

15.35  **Addressing the Regulatory Bottlenecks of Nanomedicines during Primary Research Planning**  
Dr. Rosy Favicchio, Associate Editor, Nature Biomedical Engineering

15.50  **Ethics in the Dissemination of Novel Technologies**  
Dr. Donald Bruce, Managing Director, Edinethics Ltd., Edinburgh (UK)

16.05  **Are We Building on the Shoulders of Giants or on a Nanobubble?**  
Dr. Raphaël Lévy, University of Liverpool, Liverpool (UK)

16.20  **Science Management of CLINAM Perspective**  
Dr. med. h.c. Beat Löffler, MA, CEO of the European Foundation for Clinical Nanomedicine, Basel (CH)

16.35  **Questions and Debate**

16.45  **Short break for going to Plenary Hall**

**Session 41  Satellite 3**

Wednesday, Hall Samarkand 15.20 – 16.45

41. How is the Swiss Personalized Health Network (SPHN) making health data Findable, Accessible and Interoperable? A Session in collaboration with the Swiss Academy of Medical Science (SAMW)

*About:* The Swiss Personalized Health Network initiative contributes to the development, implementation and validation of coordinated data infrastructures in order to make health-relevant data interoperable and shareable for research in Switzerland. SPHN has adopted a federative approach by building upon – and supporting – existing data sources and
infrastructures across the country. To make health data interoperable and accessible for research, SPHN rallies all decision-makers from key clinical, research-, research support institutions and patient organizations around the same table.

Chair  
**Dr. Katrin Crameri**, Director of the SPHN Data Coordination Center, Basel (CH)

**15.20**  
**How is SPHN making health data Findable, Accessible and Interoperable?**  
**Dr. Katrin Crameri**, Director of the SPHN Data Coordination Center, Basel (CH)

**15.30**  
**The Swiss Ageing Citizen Reference**  
**Prof. Nicole Probst-Hensch**, Swiss Tropical and Public Health Institute/University of Basel, Basel (CH)

**15.40**  
**Quality Assessment for Interoperable Quantitative Imaging**  
**Dr. med. Bram Stieltjes, PhD**, Department Head, Research and Analytic Services, University hospital Basel CH)

**15.50**  
**SwissGenVar: A platform for clinical grade interpretation of genetic variants to foster personalized health care in Switzerland**  
**Prof. Dr. med. Anita Rauch**, Institute of Medical Genetics, University Zurich (CH)

**16.00**  
**Clinical Research from multi-modality big data sources without proprietary interfaces in a multicenter approach.**  
**Prof. Dr. med. Jörg Leuppi**, Professor of Internal Medicine, University of Basel, Head of the University Clinic of Medicine Canton Hospital Baselland, Liesal (CH)

**16.10**  
**Swiss BioRef: Personalized reference values for precision medicine.**  
**PD Dr. med. Alexander B. Leichtle**, Inselspital – Bern University Hospital, Bern (CH)

**16.20**  
**Questions and Debate**

**16.45**  
**Short break for going to Plenary Hall**

**Session 42**  
**Plenary Session**

*Wednesday, Hall Montreal, 17.00 -17.50*

**42 Results of the 12th CLINAM-Summit**

**About**  
A group of speakers will attend specific sessions and report to the group their impressions. One of the speakers will give a summary, stating the benefit of the entire Summit

**Chair**  
**Prof. Dr. Yechezkel Barenholz**, Hebrew University, Hadassah Medical School, Jerusalem (IL)

**NN (Speaker to be announced)**

**Session 43**  
**Plenary Session**

**43. Closing Lecture**

**About**  
From High view of the European Commission the European Landscape will be discussed relating is standing in the Global set of Research, Capacity Building and Innovation

**Chair**  
**Prof. Dr. med. Marisa Papaluca Amati**, Medical Advisor, Imperial College London, London (UK)

**17.15**  
**Europe’s Science, Technology and Innovation: Standing in the Global World**

**NN (Speaker to be confirmed)**

**17.45**  
**44. Closing CLINAM 12 /2020**

**Beat Löffler and Patrick Hunziker**

**18.00**  
**END OF CLINAM 2020**

**18.40**  
**Leaving in front of Congress Center and walking to Restaurant Brauerei**

**19.00**  
**Light Farwell Dinner**
Submissions of Abstracts for Speeches and Posters

ALL MAIL RELATED TO SUBMISSIONS GO TO submit20@clinam.org

The CLINAM Foundation is glad that every year the amount of submissions is increasing and we hope to see a lot of new research progresses and findings. At CLINAM you have the possibility to present your work on a worldwide platform with members from more than 40 countries. Hereafter you will see the topics that relate to the Summit 2020:

1. Topics for Abstracts

Preamble:
The development of new tools, materials and new strategies in Nanomedicine and related fields is enabling the translation of the progressive understanding of the genome and the immune system towards innovative new medical applications. Artificial intelligence and digitalisation assist to achieve these goals. AI and digitalisation is besides Nanomedicine one of the focus fields of this summit. Particular attention is given to the potential benefits, but also to the inherent risks and pitfalls of machine learning, scrutinized to realize the full potential for precision medicine. All topics below may include the impact of AI and digitalization.

Clinical Topics:
Nanomedicine and targeted delivery and precision medicine for cardiovascular disease, rheumatic disease, oncology, gastrointestinal/hepatic disease, bacterial infection, viral infection, parasitic infection, implantology, inflammation, hematology, diabetes, neurology, neurosurgery, orphan diseases, eye and ear disease, tuberculosis, HIV, Ebola, tissue repair, orthopedics, etc.

Technology Topics:
Nanosystems, nanoparticles, nanoanalytics and diagnostics, toxicology, nano-imaging, targeted drug delivery, using nanoparticles, GMP and quality assurance, propositions for solving a medical problem in a novel way by the use of nanotechnology, novel concepts and ideas if they can be supported by thorough reasoning and could lead to novel research and solutions. Materials for use in nanotechnology and targeted medicine, concepts, diagnosis and therapy in the field of personalized medicine: clinical diagnosis and management on the individual patient’s clinical signs and symptoms, medical and family history, and data from laboratory and imaging evaluation to diagnose and treat illnesses, genetic testing leading to more personalized treatments. In addition, relevant novel tools for translational research and diagnostics are of high interest, etc.

Implications Topics:
Implications of Nanomedicine for society, developing countries, environment, risks and benefits, public health finance, health economics, and other subjects, etc.

Strategy, Government and Political Topics:
Strategy building and policy processes in nanomedicine. Strategic approaches towards establishing a unified funding area for nanotechnologies for medical research. Policy processes to foster leadership in Nanomedicine, regulatory authority topics as well as financial and marketing matter.

Industry Topics:
Industry projects and solutions in nanomedicine and targeted medicine, tools related to Nanomedicine and targeted medicine. Industry models for the future large-scale production, Good Manufacturing Practice, etc.

Regulatory and Societal Affairs, Networking and Financing Topics:

Exhibitors Topics:
Integrated interventions of exhibitors that are of high scientific or technical relevance and do not have the solely the purpose of promoting the trademark.

2. Canon of CLINAM 2020
All abstracts must cover original research aimed at future or current applications of nanoscience and targeted medicine including clinical trial designs, reports of ongoing and completed clinical trials, preclinical work, and technology papers with clinical long-term vision. All fields leading to the development of personalized medicine (precision-medicine) are also issues of great interest.
3. Deadline for Submissions of Abstracts
The Call for oral presentations and for poster presentations closes on February 2, 2020
Later submissions of Posters can be sent until 3 weeks before the Summit but will not be included into the Proceedings of the Summit. Late submitters must therefore bring 20 handouts of their abstracts with them.

4. Submission Procedure (Sending Paper Abstract / Poster Abstract)
Abstract
Send us your poster-abstract or oral presentation-abstract, (Microsoft Word, RTF, or Open document file format, using Times New Roman, font size 11, single spacing NO PDF). The submission must not be longer than 3 pages, including metadata and figures (one figure is obligatory). All illustrations, figures, and tables must be placed within the text at the appropriate points. Index your file as follows: Last name.First name.abstract20.docx (or RTF etc.) You may send besides a word document a PDF for the purpose of control at printers’ office.

Biography
Please add in your mail as separate document with your NARRATIVE CV, max one page. No more than 5 titles of recent publications can be included. Index your file as follows: Last name. First name.CV20.docx (or RTF etc.)

Portrait Photo
Send us a head picture in gif or jpg, minimum 300 dpi. DO NOT COPY PASTE THE PICTURE Index your file as follows: Last.name.First.Name.Picture20.jpg (or gif)

Sending your papers
All correspondence and abstracts relating the Submission 2020 have to be sent to submiss20@clinam.org

5. Decision for Acceptance
Decision for acceptance or declination will be given as soon as possible but at latest within 5 weeks after submission. You will receive a decision E-Mail, regarding the acceptance or declination of your work. Submissions for oral declined presentations are eligible for a poster presentation. In this case you will be informed. Decisions of the Committee cannot be discussed.

6. Presentation Times of Posters, Installation of Posters
Posters will be located in the Foyer visible for all conference attendees. On the first day at the end of talks there is a 1 hour poster presentation. Further all meeting breaks and lunches will be the preferred time to study the posters. During lunch and breaks, the authors are asked to be present close to their poster. Posters are to be presented in the size of 1.40 meter high and 1.00 meter wide. There will be the CLINAM-Poster Prize to be handed out on Wednesday, May 20 at lunch time. Poster installation is on Monday, May 18, 2020 as from 6.30 until 8.00 am and the posters can be removed on May 20, 2020, after 4.00 pm and latest until 6.00 pm.

7. The University Village and the Small Speeches
The University Village is an exquisite forum for universities and research institutes, giving them opportunity to present themselves as well as novel approaches, new research projects and initial outcomes of research, and patents. Researchers and engineers can use the foyer to install exhibition tables as one-stop-shops for the large spectrum of conference participants. Poster presenters and University Village members can apply for presentations in a special session of small Speeches, 4 minutes in length and serving to highlight the research activities in nanotechnology, targeted Delivery and precision medicine. They must comprise three slides. • Slide 1: General introduction to the topic • Slide 2: Some of the highlights of submitter’s work and institution’s work • Slide 3: The proof as to how the work fits into the area of nanomedicine or precision medicine, including a glimpse into the future. Application for a small speech is only possible after your poster has been accepted. The selection is done by Dr. Schmid, Leader of the University Village and the Small Speeches section. Apply at Ruth.B.Schmid@sintef.no A University table costs 550.00 Euro and includes a registration for the entire conference.

8. Visa for Switzerland – Embassy Appointment minimum 6 weeks before travelling!
Before registering, check Visa-Regulations for Switzerland: Participants with visa-need for entering Switzerland have to usually make their appointment with the Swiss Embassy min. 6 weeks before the Summit in their country in order to make an application and to acquire a visa. All concerned persons will ask us in a mail to send an official invitation letter, which you will have to present at the embassy. For this we need your statement of nationality, full address, permanent address, passport number, date of birth. Assure in the mail that you will come to the Summit if you receive the visa. We assist where we can, but have to accept, when the Embassies keep their deadlines.
# Registration for the Summit

**ONLINE REGISTRATION ONLY.** Payment by credit card (MasterCard or VISA)  
Bill upon request in exceptional cases possible.

<table>
<thead>
<tr>
<th>Currency is Euro</th>
<th>3 Days Early Bird until 10. 2. 2020</th>
<th>3 Days Regular as from 11.2. 2020</th>
<th>Per one Day Early Bird Registration not available</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academy, NPO, Exhibitors, Submitted speakers and Posters</td>
<td>750.00</td>
<td>850.00</td>
<td>300.00</td>
</tr>
<tr>
<td>Industry &amp; Government</td>
<td>1’200.00</td>
<td>1’500.00</td>
<td>500.00</td>
</tr>
<tr>
<td>Students presenting Poster</td>
<td>450.00</td>
<td>450.00</td>
<td></td>
</tr>
<tr>
<td>Students</td>
<td>450.00</td>
<td>490.00</td>
<td>180.00</td>
</tr>
<tr>
<td>University Village Table</td>
<td>---------------------------</td>
<td>550.00 including one registration</td>
<td></td>
</tr>
<tr>
<td>Share Brokerage Dinner with Cultural Event</td>
<td>50.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farewell Dinner</td>
<td></td>
<td>50.00</td>
<td></td>
</tr>
<tr>
<td>Special Group Rates = 3 or more registrations</td>
<td>20% on registration fees / write application to <a href="mailto:clinam@clinam.org">clinam@clinam.org</a></td>
<td>(Cannot be cumulated with ESNAM- or Fellowship-Reduction)</td>
<td></td>
</tr>
<tr>
<td>Fellowship</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| ESNAM members receive at registration a reduction of 15% *(Your membership will be controlled).*  
Cancellation until February 15: 80.00 €. After that until 15.4: 50% of fee; after 15.4: No refund of fee. |

**Fellowships**

ALL MAIL RELATED TO APPLICATIONS GO TO: Fellow20@clinam.org  
(Fellowships cannot be cumulated with ESNAM-reductions)

Fellowship 1:
500.00 €  
**The Fellowship 1 includes the Summit-Ticket, Lunches, Brokerage Cultural Event and Farewell dinner.**  
Beforehand submission of abstract of proposed Poster or Talk is mandatory. Once you have done this you can address a letter to CLINAM and apply for the fellowship giving reasons for need. Add a reference letter by a superior of your organization.

Fellowship 2:
380.00 €  
**The Fellowship 2 includes the Summit-Ticket and all lunches. No Dinners.**  
Beforehand submission of abstract of proposed Poster or Talk is mandatory. Once you have done this you can address a letter to CLINAM and apply for the fellowship giving reasons for need. Add a reference letter by a superior of your organization.

Fellowship 3:
Free 00.00 €  
**The Fellowship 3 includes the Summit Ticket, and Brokerage Dinner**  
There is a limited amount of such registrations. They are given away on a first-come-first-served principle and eligibility cannot be discussed. **Only for people with small means.**  
Beforehand submission of abstract of proposed poster or talk is mandatory. Once you have done this you can address a letter to CLINAM and apply for the fellowship giving reasons for need. Add a reference letter by a superior of your organization.

**Accommodation**

Accommodation can be applied for separately and will be decided by the Board. You may include the request in your application letter. The board decision cannot be discussed.

**Decision**

Fellowship Applicants receive a decision by email within 5 weeks. **Registration then has to be done within 7 days after notice of success** with the link in the decision letter.
Exhibition

Profit of Exhibiting
Exhibitors at the CLINAM Summit profit from meeting their potential clients in one spot since CLINAM is presently the world’s largest summit on Clinical Nanomedicine with about 500 participants in need of toolmakers findings, knowledge and their devices. SMEs and small start-up companies have the chance to showcase their skills at an affordable price and to meet ALL STAKEHOLDERS in the field of nanomedicine, targeted delivery and precision medicine. This is a Foyer exhibition at low exhibitor’s rate. All breaks and catering for lunches take place in midst of the CLINAM marketplace. Start-up booths are given to companies being less than 3 years in active development.

Regular Fees
Booking online https://www.clinam.org/exhibition.html

Go to the website, transfer the PDF sheet “EXHIBITOR REGISTRATION CLINAM 2020” to your desktop. Now the folder is activated and you can fill in your order. Send the order by email to loeffler@clinam.org

Floor space (350 €/m²)
- 6 m² (minimum)  2'100.00 €
- 8 m²  2'800.00 €
- 12 m²  4'200.00 €
- 16 m²  5'600.00 € (Maximum is 36 m²)
Company name A3 on pillar  100.00 €
1 table, 2 chairs, 1 pin board for poster & power connection  200.00 €
Exhibitors ticket for conference exhibitors multi-user badge  850.00 €
Complete Package 6m² including 1 registration  3'250.00 €

Special Start-up Booth:
We offer companies and institutes less than 3 years in the market a space of 4 m², 1 table, 2 chairs, Company name A3 on pillar power connection, 1 pin board and 1 registration including lunches at rate of 1'650.00 €
Use the same form as regular exhibitors however write in the field “Company name” STARTUP and after that the name of the Company

Evening events can be bought at the registration desk for 50.00 € separately (Brokerage Dinner on Monday, May 18 and Farewell Dinner on May 20.

This entire programme is subject to changes. The programme fully belongs to the CLINAM Foundation as its authors.
The official journal of CLINAM and ISNM, a nonprofit Gold Open Access Journal. This journal does not charge submission or APC (article procession) fees.

**Without charge**

All content is freely available without charge to the user or his/her institution. Users are allowed to read, download, copy, distribute, print, search, or link to the full texts of the articles, or use them for any other lawful purpose, without asking prior permission from the publisher or the author.

**The Mission**

The journal promotes all practical, rational, and progressive aspects of nanomedicine including theory and practice. Authors are invited to send submissions in basic science, translational, preclinical, and clinical research. PRNANO accepts original manuscripts, as well as replication studies and discussions of negative results as long as they are clearly marked as such and move the field forward.

**Support**

We support authors who wish to share their work early through deposition of manuscripts with preprint servers such as bioRxiv or arXiv, have previously been presented at conferences, published as a thesis or have previously appeared in other “non-journal” venues (for example: blogs or posters).

**Aim and scope**

The journal exists to provide a good quality and supportive publishing forum with quick turnaround time for nanomedicine researchers and provides a cutting-edge and reliable source of information to societies, for libraries, and to the interested public without additional cost.

**Online only**

PRNANO is online only. Articles are published continuously on a rolling basis, then organized into quarterly issues (January, April, July, and October) and annual volumes. All articles receive a unique identifier (DOI:10.33218/prnano) and are archived both in Portico and Crossref, for preservation. We are members of COPE and our green archiving policy is registered in Sherpa/Romeo, i.e., pre-print and post-print PDFs, as well as publisher’s versions can be archived, without restrictions.

| First Exhibitors CLINAM 12 /2020 and Universities in the “University Village” |
|------------------------------------------|---------------------------------|
| Ardena                                   | Lipoid AG                       |
| BioNanoNet                                | Nanbiosis                       |
| CIER-BBN                                  | Nanomed Network (Future Medicine) |
| Cordouan Technologies                     | Polymun Scientific GmbH         |
| Ciber BBN                                 | Precision Nanomedicine (Journal) PRNANO |
| ESNAM                                     | Precision NanoSystems, Inc      |
| InnoMedica                                | SeroScience                     |
| International Society for Nanomedicine    | TEComedical AG                  |
| Izon Science Europe Ltd.                  | University Village: Israel, Switzerland, Italy Norway, Hungary, The Netherlands, Austria and further |
First Exhibitors CLINAM 12 /2020

...and further Exhibitors
SPONSORS OF CLINAM SUMMIT 12 /2020

...and further Sponsors